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THE

NATIONAL

QUARTERLY REVIEW.

EDITED BY

EDWARD I. SEARS, LL.D.

Pulchrum est bene facere reipublicæ, etiam bene dicere haud absurdum est.

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1874.

Sewing Machine Sales of Last Year.

NEW TRIUMPHS

OF

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The statistics from sworn returns of the Sales of Sewing Machines in 1872 (reported in 1873), show that the Singer Manufacturing Company sold, last year, over FORTY-FIVE THOUSAND MORE MACHINES THAN ANY OTHER COMPANY, and over one quarter of all machines sold during that year. Nine out of ten of said Singer Machines were for FAMILY use—proving the great popularity of the Singer in the household. Annexed are the sales of the different makers:

The SINGER MANUFACTURING COMPANY Sold 219,758 Machines.

Wheeler & Wilson Manufacturing Company	4.6	174,088	4.6
Howe Machine Company (estimated)	6.6	145,000	++
Grover & Baker Sewing Machine Company	6.6	52.010	4.4
Domestic Sewing Machine Company	6.6	49,554	4.4
Weed Sewing Machine Company	4 +	42,444	+4
Wilcox & Gibbs Sewing Machine Company	4.6	33,639	
Wilson Sewing Machine Company	6.6	22,666	
Amer. B. H. O. & Sewing Machine Company	+ 4	18,930	5.6
Gold Medal Sewing Machine Company	4 +	18,897	4.6
Florence Sewing Machine Company	6.4	15,793	4.1
B. P. Howe Sewing Machine Company	4.6	14,907	
Victor Sewing Machine Company	6.0	11,901	+ 6
Davis Sewing Machine Company	4.6	11,376	* 6
Blees Sewing Machine Company	6.0	6,053	+6
Remington Empire Sewing Machine Company	6 .	4,982	**
J. E. Braunsdorff & Co.	6.6	4,262	44
Keystone Sewing Machine Company	6.6	2,665	44
Bartlett Reversible Sewing Machine Company	4.4	1,000	* 4
Bartram & Fanton Manufacturing Company	+ 6	1,000	++
Secor Sewing Machine Company	+ 6	311	* 4

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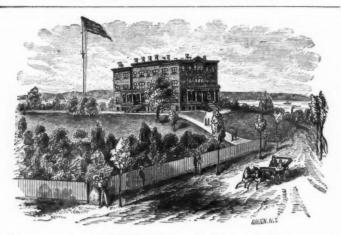
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Received for Premiums and Annuities during the year. 5,402,158 53 Received for Interest during the year. 1,769,251 91

Total Receipts for 1873......\$7,171,410 44

Total Assets, January 1, 1874.....\$28,541,473 54

Ratio of Expenses to Income (excluding taxes), 8.59 per cent.

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THE

NATIONAL QUARTERLY REVIEW.

No. LVI.

MARCH, 1874.

Art. I.—1. Journal of Researches—a Voyage of H. M. S. Beagle Round the World. By C. Darwin.

- 2. On the Distribution and Structure of Coral Reefs. 1b.
- 3. Researches d'Ehrenberg en 1839.
- 4. Corals and Coral Islands. By F. D. DANA.
- Contributions to the Natural History of the United States. By Louis Agassiz.

In looking back on the mighty changes that have been, and still are, going forward on the earth's surface, the philosophic mind cannot but notice the apparent insignificance of the agents by whose instrumentality those changes are wrought out. No wise man will despise small things, and for this reason he will not fail to take precautions that may seem unnecessary to others. Neglect, apparently the most trivial, may be the cause of the most frightful accidents, or may inaugurate a series of wide-spread calamities.

On the other hand, influences that may seem to us ridiculously insignificant have achieved results that mock the fruition of the noisiest and most pretentious efforts. The boring of minute insects may at last make a breach in a levee, and produce an inundation which will destroy thousands of lives and millions of property, converting dry land into a watery waste. But, meanwhile, other animals, equally minute, are laying the broad platforms, not of halls or temples, but of islands or even future continents, fitted for the habitation and sustenance of man. this the result of active exertion, as is popularly but erroneously supposed. The beautiful language of poetry has been, unfortunately, invoked to perpetuate this error, which prevailed universally up to within the last forty years. Sublime descriptions are given of the stupendous labors achieved by those minute animals-of the dwellings they construct, which afterwards become their tombs. There is, indeed, something poetic and fascinating in the idea of those tiny organisms-with consistent inaccuracy termed worms or insects-building marble palaces dwarfing in number the dwellings in the mightiest cities earth ever saw, or even in all earth's cities combined, whether they have passed away or still exist. It is equally pleasing and fanciful to read how the proprietors of these mansions held a perpetual feesimple of their residences for purposes of sepulture, and founded nations whose individuals were almost literally as numerous as the sands of the seashore, and which existed in communities longer than the wildest vagaries of Hindoo legend claim for their mythological records! This conception, beautiful as it is, is now consigned, like many a cherished illusion, to the shadowy regions of fable. Like the growth of the lilies of the field, which toil not, neither do they spin, is the steady uprearing of those stupendous structures, which shame the proudest efforts of labor and skill. As the unconscious influence of a noble soul may, by firing the emulation of a great and kindred spirit, exert a more potent and permanent influence on our race than the achievements of others better known and apparently more successful, so the mere process of life in the development of these minute organisms achieves results in the presence of which the labors of the ant, and the

beaver, or the most arduous and protracted efforts of man himself are insignificant beyond comparison.*

Though the facts of coral formation may not be as fanciful as the poetic hypothesis, they are even still more amazing. Let us suppose for a moment that human beings existed so long, and in such vast numbers, on the earth's surface, that its crust, from ten to two hundred miles in depth, consisted of successive layers of human skeletons, cemented together by other solid substances intermingled with them, the constant mortality of each successive individual adding slowly and silently to the vast pile. This will give us a faint idea of the inconceivable numbers of the animals whose skeletons have mainly contributed to the formation of coral reefs and islands, and also the immense period during which they successively lived and ceased to exist. Each individual animal is technically termed a polyp, to which species of radiate nearly all the coral animals belong. A single cluster, branch or development, with the skeletons joined to a common base, may contain numerous polyps, and is termed a zoophyte.

Mr. Dana estimates the average rate of growth of a coral reef at five feet in a thousand years; Ehrenberg thinks it still less.† Many existing coral reefs are calculated to have a thickness of, at least, two thousand feet, and far greater thicknesses may possibly exist.‡ A mass of hemispherical coral, twelve feet thick, forming a single zoophyte, is estimated to contain 5,500,000 living polyps.

Now, when we reflect that in the Pacific Ocean there are continuous coral formations many thousand square miles in extent, and that the great Australian reef is over 1,000 miles in length, we can scarcely conceive the number of skeletons it would take to constitute such formations. We only know, that, allowing for difference of size, a single one of the many separate coral tracts of the Pacific would contain more skeletons than the

Dana, Darwin, Agassiz.

[†] Dana, page 253; Ehrenberg, page 751; see, also, Lyell's Prin. of Geology, chapter last.

[‡] Darwin, Dana, Lyel!.

whole globe would contain human skeletons under the extreme supposition above mentioned. At the rate of five feet in a thousand years, at least four hundred thousand years would be required for the growth of a coral formation two thousand feet in thickness. Great as is this period, there are circumstances which render it probable that the actual time required would be far greater. In the first place, no living coral will grow on other living coral; * consequently, when a zoophyte ceases to exist, an indefinite period must elapse before growth is resumed. For this reason among others the coral growth is not uniform on any reef or island, but is distributed here and there in patches, sometimes of great extent, while other large areas are bare. † In the second place, as we shall see presently, it supposes a uniform rate of subsidence of the coral, corresponding exactly with its upward rate of growth, otherwise a lateral formation will occur, which in any event would subsequently delay if it did not altogether check the outer growth. For these reasons the time required for a reef of the above thickness would, in all probability, be far greater than the above estimate. The greatest depth at which living corals have been observed does not exceed twenty-five fathoms.‡ Ehrenberg gives only six fathoms as the range on the Red Sea reefs, but Capt. Moresby & and Lieut. Welstead found them at a depth of twenty-five fathoms in a place where the water was unusually pure and free from sediment. Agassiz observed that the reef-building corals of Florida did not extend below ten fathoms, but Mr. Pourtales found one or two species at a depth of fifteen fathoms. Darwin and Dana agree in giving the ordinary limit of coral growth to be twenty fathoms. Under these circumstances it may be asked how reefs of the enormous thickness just mentioned can be formed.

² Ehrenberg.

⁺ Dana, supra.

[‡] Kotzebue's Voyage, Capt. Moresby, etc.

[§] In observations elsewhere it may be remarked that Capt. Moresby never found living coral at a depth greater than twelve or fifteen fathoms. See Darwin.

It can only be explained on the theory of a gradual subsidence of the land, and unless the rate of subsidence exactly corresponded with the upward elevation of the coral reef, it is obvious that when the surface of the water was reached, above which the zoophytes cannot exist, they can then extend only in a lateral direction, till a further subsidence enables them to extend upward once more. This gradual subsidence, now universally admitted, is of itself a complete solution of all the various processes and appearances observed in the different

stages of coral formation.

Before illustrating this point, we shall briefly notice the old theory that prevailed up to a recent period, but which must now be regarded as abandoned. It was observed that the form of most coral reefs and islands was circular or oval, inclosing a lagoon or lake of more or less extent and in turn surrounded by a deep ocean. These islands are known by the name of atolls. Their appearance very naturally gave rise to the theory that the bed of the ocean immediately below the circular formation was simply the crest of a submarine volcano, of which the enclosed lagoon was the extinct crater. In those cases where the lagoon enclosed within the reef contained other islands, they were regarded as smaller cones rising from the interior of the large crater, as in the great Hawaian volcano. This theory the first examinations and researches seemed to confirm. In the first place, the coral regions of the Pacific Ocean, where the atolls are most numerous, were beyond all question originally the seat of volcanic action, and though this agency is extinct where the coral regions actually exist, its present activity in Hawaii, the New Hebrides, the Ladrones and other islands, exhibits to us what was once the common condition of the whole region in question. Secondly, in some places, as for instance the Gambier Islands, rocks composed of porous lava rise up in a lagoon bordered by a circu-Thirdly, in islands of undoubted volcanic formation, the harbor is often formed by a narrow breach in the cone, converting the crater into a circular haven. In like manner there is often a single deep pas-age, leading from the

sea into the lagoon of a coral island, forming a harbor which seems the exact counterpart of that formed by the crater. Lastly, the numerous islands in the Galapagos Archipelago have their southern sides the lowest and in many cases broken down, so that, if submerged and incrusted with coral, they would resemble true atolls in shape, the latter having their windward sides always the highest.*

Nothing, then, would seem at first sight more probable than the theory of the formation of those islands from the craters of extinct volcanoes, and this opinion was, for some time, all but universally accepted. Grave objections, it is true, were urged by some against the theory; but, like most researches after truth, they were at first deemed impertinent cavils. With the progress of investigation, however, the objections multiplied, and the able and exhaustive researches of Darwin and Dana have finally broken it down altogether. The objections to the old theory may be briefly summarized as follows: First, the volcanic cones were originally formed either above or below the surface of the sea. On the first supposition, the crater would sink beneath the waters, and, except in rare instances, would be destroyed during the subsidence. Secondly, on the old theory, craters should exist over fifty miles in diameter, while craters over thirty miles in diameter were of common occurrence. No facts give any countenance to such an assumption. Thirdly, on the same supposition the high islands of the Pacific Ocean, encircled by coral reefs, should abound in craters. On the contrary, the three nearest groups to the great coal region, viz., the Marquesas, the Gambier, and the Society Islands, contain, so far as known, no craters whatever. But what gave the finishing blow to the theory is the well-established fact, that the extreme depth at which living zoophytes have been observed does not exceed twenty-five fathoms. This would not only necessitate the presence of innumerable volcanoes throughout the Pacific Ocean, which were, without exception, almost identical in

^{*} Lyell's Prin. of Geology, last chapter.

height, or, in other words, equidistant from the sea level; but, as before noticed, in view of the thickness of most reefs, in any event necessitates the theory of gradual subsidence, which of itself is sufficient to explain all coral formations.* Some writers have supposed that those islands were formed on immense shallow plateaux or submarine banks; but besides the great improbability of this supposition, which we shall explain further on, it gives no explanation whatever of the lagoon structure.

We shall now show that the theory of gradual subsidence, necessary under any circumstances, is alone adequate to explain all the phenomena of coral formation however varied or complex. Let us picture to ourselves an archipelago, mainly composed of three large islands in the Indian Ocean, existing in an era far remote. Suppose them to be situated west of Hindostan, and to extend from 14° north to 8° south lati-The centre island is about 600 miles in length by about 80 in breadth, about equal in size to the New England States, or the State of New York. The two other large islands are more compact in shape, but less than half the area of the centre one. The centre island has two parallel ranges of lofty mountains, running longitudinally through its extent. The mountains on the other two are not quite as lofty, and the southern one contains a number of lofty plateaux or elevated table lands. They are diversified with forests, mountain ranges, valleys, rivers, hills, dales, and probably inland lakes. In the same clime as Ceylon, they would doubtless be as rich and luxuriant as the latter in its rare productions, and would be far more extensive. Let us suppose each island of the above archipelago to be encircled by a coral barrier reef, which, previous to any subsidence, has grown to the sea level. Each of these barriers, particularly in the larger islands, is interrupted by numerous wide passages, entirely free from coral. The reason is two-fold. In the first place, the zoophytes cannot exist in fresh water, or in water holding much

Darwin, Dana; Lyell's Prin. of Geology.

sediment in solution. They are epicures in their own way, these polyps, and require for their existence pure sea water, uncontaminated by earth or river. Wherever, then, the larger rivers of that island flow into the sea, bringing down their accompanying sediment, the coral will not be found. Opposite beetling cliffs, or precipitous shores, indicating deep water, close in shore, coral will also be absent, as it only grows in limited depths. These reasons, with long extents of sandy beach, may possibly cause interruptions of the coral formation for considerable distances along the shores.

We shall now suppose that a general subsidence of the entire Archipelago has set in. Slowly but inevitably these large and beautiful islands sink, the sea gradually encroaching on the lower portions of the coast, and penetrating in deep, arm-like bays into the valleys and dales of the interior. The surrounding coral formations participate in this subsidence, and here we are in presence of a beautiful and interesting fact. While the polyps may exist and multiply at the depth of fifteen or twenty fathoms, they prefer to live as near the surface as possible; consequently, as soon as the reef is submerged, the summit will be their favorite location. Hence, as the reef, in common with the island, subsides, the coral formation again grows constantly to the surface. Thus, while the island is steadily sinking, and the sea continually encroaching on its shores, the outer wall remains as before, bidding defiance alike to the mysterious operations of the earth and the wild storms of the sea. It would be very far from the truth, however, to assert that storms have not a very important effect on the modification and distribution of these formations. Sometimes large masses of coral are torn away and hurled violently to the shore; the debris being occasionally piled up to an extraordinary height. Hence the windward sides of coral islands are invariably higher than the leeward, and the passage into their lagoons is invariably in the latter direction. Storms also smooth and polish the formation, filling up the

Dana, page 257.

pores of the dead zoophyte-which is but a portion of the whole coral-and cementing it with the fine coral sand, worn by the action of the waves, and the remains of shells and other marine organic products. At this stage, too, nullipores and other corallines, differing from coral animals in being true vegetables, also in their superior solidity, having no visible pores or cells, frequently grow on the outer reef, solidifying the mass still more, and from their hardness far exceeding that of the limestone, helping to secure it from the abrading action of the waves. These vegetables, however, are by no means universally present, nor is their presence necessary.* The action of the storms on the coral distribution will be evident in the case of the islands under consideration. So tenacious of life is the zoophyte, that, though hurled by the storm from its parent stem, it is ready to sprout on any rock where the polyps can find quiet long enough to secure a firm attach-As the subsidence progresses, the deep arms of the sea, embaying each island, finally meet, converting each respectively into a group of islands, consisting of the plateaux and other higher ground of the former islands. The storms now east fragments of living coral on the rocks adjacent to the new islands, or the lateral growth of the coral may reach the islands nearest the reef.: The result is, that the new islands in the course of time are encircled, each by a new reef, and, although the greater part of the land has now disappeared, several of these islands, particularly in the central and southern groups, are still from 500 to 4,000 square miles in extent. The submergence continuing, the plateaux on the secondary islands, gradually declining till they become level plains, at length sink below the sea level. The former mountains, now reduced to moderate elevations, become in turn groups of still smaller islands.

We now have a number of very large reefs, encircling spaces of sea many thousands of square miles in extent, and

o Dana.

⁺ Ib.

[‡] The latter is probably the case in most instances. See Darwin.

within these spaces are many other reefs inclosing groups of small islands. The subsidence has at this time become so great, that the water between the great outer reefs and the secondary reefs inclosing the islands is now very deep, and the outside ocean, immediately beyond the reef, is still deeper. Hence, as the zoophytes must live in deep water, and there is no possibility of further lateral extension, the outer reefs gradually become narrower, and finally disappear altogether.* The same phenomenon would occur still more rapidly, if at this point the subsidence should become somewhat more rapid than the coral growth. Sometimes, it is true, the coral will expand from a comparatively narrow stem into a large tabular mass, resembling an enormous umbrella. These are called chapeiros and mushrooms. In the Abrolhos Islands and in certain regions of the Pacific tracts of ocean are covered with these, but they only occur within outer reefs, on comparatively shallow plateaux, where the tides are moderate and the water is comparatively smooth and protected from storms. Otherwise, from their very insecure foundation, they would evidently be quite unable to withstand the fury of the ocean storms. Near Tongataboo the United States exploring vessel Vincennes ran on one of these plateaux, but instead of being stuck fast, the whole plateau broke off from its stem and disappeared, leaving clear water for future vessels, where the chart once indicated a sunken reef. Not a particle of injury was done to the vessel; but, though similar occurrences are not uncommon, vessels usually are not so fortunate, and the reef proves more firm and refractory.†

The reader will now bear in mind that the great reefs encircling the original islands have disappeared, and, with the continued progress of the submergence, are buried far out of sight. There remain three distinct groups of reefs or large atolls, where the secondary islands once stood, and these generally inclose small islands consisting of the

^{*} See Dana, page 323; also Lyell, Principles of Geology, chap. 50.

[†] See Prof. Hartt's Geology and Physical Geography of Brazil.

mountains or higher plateaux of the original islands, some of which are now down to the water's edge. In the centre group these large atolls are in two parallel ranges for hundreds of miles, indicating the presence of the two original mountain ranges. In many instances, particularly in the southern group, the reefs inclose level spaces, which were originally the high plateaux, a feature which, as before observed, prevailed in the southern island. These being soon submerged, and probably affording in most instances no proper surface for coral growth, become huge atolls, inclosing spaces of open water sometimes from 2,000 to 4,000 miles in extent. These reefs, consequently, share the fate of the outer reefs, and are in turn sub-Meanwhile, most of the islands inclosed within the other large reefs gradually sink to the water's edge, and are, in most cases, surrounded by a separate coral reef, as before. These interior atolls are thus inclosed within large atolls, and it is noticeable that the interior atolls are in most instances near the outer reefs, indicating the lateral extension of the coral from the latter. Thus the central space within most of those reefs is a large sheet of open water. In a few instances islands will be formed on the outer reef line; while the inner atolls will be in many instances a series of islets encircling the inclosed lagoons. With continued subsidence, the smallest of those inner atolls diminish in size, and the inclosed lagoons become finally dried up by the detritus washed into them from their respective reefs, or the inner reef itself alone remains, rising from the water only in occasional places.* The original central island, having the loftiest mountains, and in general the highest elevation, would be the last to reach the above condition.

Let us suppose this island, then, to consist now of groups of large reefs, inclosing spaces thickly dotted with atolls, with small islands of low elevation, and with rocks, while the intervening space is dangerous with sunken coral rocks. The secondary reefs of the northern group, in consequence of the

Dana; also, Agassiz on Florida Reefs.

218

lower elevation of the northern island, or a somewhat more rapid subsidence in that quarter, have meanwhile all disappeared, together with most of the inner atolls, a few small coral islands alone being left; while the south group contains a few coral islands of somewhat larger dimensions than the other groups, with a number of submerged banks, some of which are of great extent, but all of which are submerged atolls. The spaces between each outer reef are deep water, never less than from 150 to 250 fathoms, often far greater, while the surrounding ocean is still deeper. The subsidence has now ceased, or is so small as to be unnoticeable, while three distinct clusters, as above described, cover the ocean for a space of over 1,500 miles in length.

The above is no imaginary sketch, but an accurate description of the effects that would follow from the subsidence of the supposed island. It not only explains in a most beautiful manner all the successive phenomena attending the formation of coral islands during subsidence, but is a complete elucidation of a process which would exactly produce the present condition of the Laccadives, the Maldives, and the Chagos group in the Indian Ocean; and we give this particular example as the most perfect illustration we know of all the successive steps in the process of coral formation. The two parallel clusters of huge atolls in the Maldives still exist, inclosing within their limits other smaller atolls, besides islands, rocks, and intervening coral reefs. In the Laccadives'the outer atolls have disappeared, indicating a still greater subsidence, and a few small islands alone are left, over which the storms of ocean occasionally sweep. Such a catastrophe occurred in 1847 on the two largest of these small islands; a terrific hurricane sweeping over them, uprooting the cocoa-nut and other trees, filling the wells with salt water, destroying the houses, and causing a loss of 1,500 lives, nearly all the inhabitants on the islands. The Chagos group contains some islands of moderate size, with a number of sunken banks,

^{*} Lyell, as before, chap. 50; Dana. Capt. Moresby.

which all authorities pronounce as submerged atolls. The great Chagos bank, oval or nearly circular in shape, is an example of one of these, being 80 miles long, and consisting of a fringe 4 to 10 fathoms deep all round the rim, thence descending rapidly to a depth of 40 or 50 fathoms throughout its interior.*

As before observed, the larger a coral island is the more numerous will probably be the entrances into its lagoon. They are always on the leeward side, which renders the harbor more secure and easy of access, and is of singular advantage to navigators. Sometimes green islets dot the lagoon all around, interrupted by bare reef rock or the various passages into the lagoon. It is a beautiful sight to observe from shipboard a succession like this of verdure-clad isles, which, like emeralds surrounding a ring, gem the line of the reef, inclosing within the bosom of the atoll an expanse of comparatively smooth water. Since the formation of the coral corresponds with the slope of the shore, as subsidence progresses the atoll diminishes in size, except when it rests on a level plateau. At length the lagoon is obliterated from the lateral growth of the coral over its surface, and the detritus accumulated from the wearing of the reef. Thus the very small islands have no lagoon, but usually a slight depression in the centre. Occasionally in larger islands the lagoon is obliterated by the growth of the barrier reef all around, gradually cutting off communication with the sea. causes its disappearance from evaporation. A slight upheaval, subsequent to the era of subsidence, produces, of course, the same result.

Perhaps some of our readers may suppose that, apart from the thickness of coral reefs, the theory of subsidence is quite gratuitous and unsupported by other evidence. Though this evidence is in itself sufficient, and the theory itself explains every phase of the formation, to regard it as the sole or even the chief evidence of such subsidence would be quite erroneous.

^{*} See Dana's Map, page 192.

The gradual subsidence of large tracts of land rests on wellestablished evidence, quite independent of that derived from coral growth. The island of Heligoland, in the North Sea, was, 1,400 or 1,500 years ago, a large island, the home of a considerable portion of that Anglo-Saxon race who afterwards conquered and occupied England. For a long period it has been gradually sinking into the ocean, and it is less than half the size it was in 1807, when seized by England. Some years ago it was less than a mile in diameter, and still decreasing. At no distant day it will probably disappear altogether. The northern part of Jutland, once a peninsula, has been within the last thirty years converted into an island by the Lymfiord. The encroachments of the sea on the eastern coasts of England and Scotland are well known, some towns and villages having disappeared and others been removed further inland.* For at least four centuries the western coast of Greenland has been subsiding for a distance of 600 miles. Ancient buildings on low, rocky islands and on level ground near the main shore have been submerged, and the Greenlander, for this reason, never builds his hut near the water's edge. In one instance, Moravian settlers had to renew more than once the poles on which their large boats were set, and the old poles still remain beneath the water, measures and silent witnesses of the change. † But, perhaps, the most singular instance of present action is afforded by the peninsula of Scandinavia, where a tilting motion of the whole region is observable. The result of this singular movement is an upheaval of the whole, from the North Cape to Stockholm, a distance of over 700 miles, varying from more than three feet to a couple of inches in a century. South of Stockholm the upheaval ceases, and coming to southern Scandinavia a very perceptible subsidence has been proved. A stone at the water's edge, measured by Linnæus, was, a century later, 100 feet distant. Assuming the slope of the shore to be one foot in 200 feet, this rate

^{*} See Lyell, Prin. of Geology, chap. xix. † Proceedings of Geol. Soc., No. 42; Lyell, chap. xxx.

would suffice for the formation of coral reefs. One circumstance is noticeable in the history of this subsidence. Sir Charles Lyell declares, after minute investigation, that there are clear evidences of alternate subsidence and upheaval. One of these he describes as follows:

"In digging a canal in 1819 at Soderstelje, about sixteen miles to the south of Stockholm, to unite Lake Maeler to the Baltic, marine strata containing fossil shells of Baltic species were passed through. At a depth of about sixty feet they came down upon what seems to have been a buried fishing-hut contructed of wood in a state of decomposition, which soon crumbled away on exposure to the air. part, however, which had stood on a level with the sea, was in a more perfect state of preservation. On the floor of the hut was a rude fireplace, consisting of a ring of stones, and within this were cinders and charred wood. On the outside lay boughs of the fir, cut as with an axe, with the leaves or needles still attached. It seems very difficult to explain the position of this buried hut without imagining, as in the case of the temple of Serapis, first a subsidence to the depth of more than sixty feet, then a re-elevation. During the period of submergence the hut must have become covered over with gravel and shelly marl, under which not only the hut but several vessels also were found of very antique form, and having their timbers fastened together with wooden pegs instead of nails."*

Hitherto we have supposed the gradual subsidence in the Indian Ocean to be uniform. Assuming a temporary interruption of this movement, succeeded by a period of gradual upheaval again followed by a subsidence, the explanation of the phenomena becomes even simpler. Imagine the subsidence to cease while the secondary reefs are forming, and a gradual upheaval to take place. The water between the outer and secondary reefs is already too deep for any more lateral coral formation, as is also the outer ocean. As the upheaval progresses, the whole coral reef is bared to view, and the zoophytes cease to exist. A subsidence now recommencing will inevitably bury the reef out of sight. The same thing would happen to the submerged subsequent reefs, by the same phenomenon occurring at subsequent periods.

Prin. of Geol., chap. xxx.

Though this alternation probably did occur, its supposition is not necessary, for even with a uniform subsidence the same phenomenon would occur, though it would take a longer period for the disappearance of the reefs. That alternations have occurred elsewhere is beyond dispute. Honden Island, one of the Paumotus, contains many deserted shells of the huge Tridacna, lying in clefts of the coral rock above the level of high tide in the lagoon. There are three entrances to this lagoon, two of which are now dry even at low water, while the third is dry at high water. All the indications on this island show an upheaval of two feet. Clermont Tonnerre in the same group indicates the same elevation, while Dean Island shows an upheaval of six feet. Elizabeth Island has perpendicular coral cliffs, over 50 feet in height; its reelevation is calculated at 80 feet. Aurora Island, composed of coral limestone, has experienced an elevation of 250 feet. Its cliffs resemble the palisades of the Hudson, and are worn in some places into deep caverns. Its western side is the highest, whence it slopes gradually to the sea. The Tonga islands all exhibit proofs of elevation, varying, so far as ascertained, from 20 to 100 feet. In one island, Eua, coral is said to exist at a height of 300 feet. Through the Pacific in general these elevations occur. In the Ladrone Islands the greatest elevations have been observed; coral rock being found in two islands at a height of 600 feet.* These facts indicate that throughout the greater part of the Pacific Ocean the subsidence has for a considerable period ceased, and been succeeded by an upheaval, varying from an insignificant amount to 600 feet, and averaging, we should judge from the observations, some eight or ten feet. These upheavals, though very extensive, do not seem to be general or synchronous through the whole Pacific region. Sometimes they are confined to a very limited area, and vary considerably within that space; at other places they extend over entire island With a few possible exceptions, the rise in all apgroups.

See Dana, Lyel', Beecher, and others.

pears to have been gradual.* In a limited part of the Pacific region subsidence is still in progress. In the islands of Ualau and Ponape, of the Carolina group, certain sacred structures were built on small islets, which are now beneath the level of the water. What once were paths are now passages for canoes, and breaking down the stone walls allows the water to enter the inclosure.† There is reason to suspect a similar state of things in some of the neighboring islands. great coral region of the Pacific, stretching from the southwest to the north-east, a distance of 6,000 miles in length by 2,000 in breadth, the extreme southern and southwestern portions exhibit high land, sometimes containing lofty mountains, fringed or surrounded with coral reefs. Proceeding northward, these are succeeded by coral islands with their accompanying lagoons. Approaching the equator, these diminish in size, till the lagoons disappear and they become small islets, which in turn disappear, and an unbroken expanse of water succeeds till we reach the Sandwich Islands. This proves that, beginning at the southern and south-western portion of this region, the subsidence steadily increases till the equator is reached, when finally the islets disappear alto-Now, it is precisely near the line of greatest depression, where, if at all, the action should be longest continued, that the subsidence is still in progress, though it has ceased in every other portion. Beyond where the ast isles disappear a wide waste of waters is seen for the space of 1,500 miles each way, reminding the observer of the blank, starless space in the heavens. Beyond this space mountainous islands again appear, showing that the subsidence has extended no further, or has had but a limited effect.;

Thus, while the high and mountainous islands of the southern portion show that the subsidence has not wholly engulfed the original land, its total disappearance, succeeded by coral islands further north, proves the subsidence to have been

^{*} Dana, etc. † Hall, Wilkes' Expedition.

[†] Dana; Darwin above cited; also Lyell, as before,

[&]quot;OL. XXVIII. -NO. LVI.

greater, while the common disappearance of all land, with the succeeding coral formations, if any such existed, between the equator and the Hawaian Islands, indicates when the subsidence was greatest. The reappearance of the Hawaian group, with the islands due west, indicates that the subsidence has again diminished or has terminated at these places. Assuming, then, with all the latest authorities, that the Pacific Ocean once contained a great continent, or archipelago of large islands, where the above coral region now exists, and looking at coral formations in other parts of the world, it becomes an interesting question whether all coral formations were not originally barriers or fringing reefs to continents or very large islands, such as we have already assumed. The more we look at the facts. the more they favor this supposition. In the latest authori ties all agree that the thickness of the reef, consequently the antiquity of the formation, depends very much on the distance of the reef from the shore.* For instance, the great Australian barrier reef is an example of one of the oldest existing formations. The exact thickness has not been ascertained. but from the depth of the water just beyond the reef it must be over 2,000 feet, and may be far greater. The outer depth is unknown. This result is naturally to be expected in consequence of its distance from the shore. This distance varies from twenty to seventy miles, and forms a natural harbor for a distance equalling that from Florida to Newfoundland.† The depth varies from ten to sixty fathoms.‡ Wherever the torrid or semitorrid shores of large continents are engirdled by shallow seas with rocky bottom, and unaffected by recent volcanic action, cold currents, or the presence of large sedimentary rivers, there the coral formation is sure to be present. The southern coasts of France and Italy, the northern and south-eastern coasts of Africa, the shores of the Red Sea, with portions of the Brazil, California and Florida shores, show the invariable presence of coral under these conditions. In the Florida

O See Dana, pages 157-259; Darwin, page 256; Lyell's Principles Geology, page 791.

[†] A distance of over 1,200 miles.

‡ Jukes' Voyage; Dana.

reefs the subsidence is plainly indicated, and here we see a barrier reef with coral islands forming within and in some cases on it.* In case of a further subsidence of the Australian barrier it would disappear, and, if continued, the continent would share the same fate, leaving, as in the blank Pacific space above noticed, no indication whatever. Admitting the existence of a continent or group of large islands in this latter region, it is more than likely that, for a very large portion of its circumference, it has been fringed or surrounded with reefs that have now disappeared. The Bahamas and Bermudas afford present examples of such barrier reefs. great Australian reef itself may once have been a continuation of the great Pacific reef system. The coral reef on the west of New Caledonia extends 150 miles beyond the island to the north, and sixty miles to the south, making a continuous coral barrier over 400 miles in length. The northern portion may once have been connected with the extensive reefs of the Louisiade group and those to the north of New Guinea, while the southern prolongation may have been continued west to the great Australian reef, which terminates exactly at the same latitude. Thus there would be an immense coral reef bordering the north-east of Australia and the entire western extremity of the great coral region of the Pacific. may observe here, that the thickness of the Louisiade and New Caledonia reefs is enormous, being regarded as equal to those The similar thickness of the Gambier reefs at of Australia. the south-eastern extremity of this region may possibly indicate it to be a remnant of the same formation. As further evidence on this subject we quote Mr. Dana, who, we may remark, does not seem to favor the above theory. He says:

"In the East Indies the most extensive reefs are found in the open seas between the large islands, these islands at the same time often being without proper reefs, or with mere traces of coral. This is the case between Borneo and the range of large islands south; the China Sea is another instance of it; north of New Guinea a few degrees is another."

See Agassiz, above cited.

Mr. Dana attempts to explain the formation of these reefs as follows:

"A sinking island becomes a more and more favorable spot for the growth of coral as it descends; for as its extent diminishes, its streams of fresh water and detritus also decrease. It might therefore be expected, on this account alone, that such isolated spots of land, away from all impure waters in the open ocean, should become the bases of large reefs."

In this explanation the distinguished author seems to have overlooked a very grave objection. With the subsidence of the island, the bed of the adjacent sea would also sink in nearly every instance, thus rendering it impossible for the coral formation to extend to any great distance from the island in question. Therefore, unless the island was small, and rested on a long, rocky plateau, or series of plateaux, covered with comparatively shallow water, or unless a chain of small islands should extend for long distances in such water, long barrier reefs could not be formed. There is no known instance of the existence of any such long, narrow plateaux, or series of islands extending over such plateaux, while, according to the above theory, they should be exceedingly numerous. The proverb, "Bonus Homerus dormit," seems applicable here, and we shall hence appeal from Philip asleep to Philip awake. Speaking of the formation of coral islands on such plateaux, Mr. Dana observes, page 256: "Shall we suppose, with some writers, that these islands were planted on submarine banks, within one hundred and fifty feet of the surface of the sea? As has been said, there is no authority for the supposition. We nowhere find regions over our continents with elevations so uniform in height; and submerged banks of this kind are of extremely rare occurrence." Such being the case, and coral growing only at limited depths, it seems impossible to account on Mr. Dana's hypothesis for the numerous and long barrier reefs now existing. It is far more likely and accordant with reason to suppose that, previous to a general subsidence, these mighty reefs had their origin in rocky, gently shelving shores, adjacent to large tracks of land, where the conditions of their development were otherwise favorable;

and Mr. Dana unconsciously admits this a little further on, where he says: "It is thus seen that the earth is belted by a coral zone, corresponding nearly to the tropics in extent, and that the oceans throughout it abound in reefs, wherever congenial sites are afforded for their growth." The barrier reefs of the Bermudas and Bahamas afford further examples of the antecedence of the reef to the atoll formation. Indeed, Mr. Dana thinks that Florida, Cuba and the Bahamas may together once have been the south-eastern prolongation of our continent. But however this may be, we have given sufficient examples to indicate the great probability that all original coral formations were in the shape of fringing or barrier reefs, encircling large islands or continents; and, indeed, this conclusion would almost seem to be a natural and inevitable corollary from the very theory of subsidence. From the facts we have given on this subject, the reader will now be prepared to draw the following conclusions:

First—The theory of gradual subsidence, with its correlative theory of upheaval, is of itself sufficient to explain not only all the various and complex phases of coral formation, but its presence anywhere on the earth's surface. Secondly -The thickness of most coral reefs is of itself sufficient to prove such subsidence, so far as they are concerned. Thirdly -The actual proof, even the very progress, at the present time, of such subsidence and upheaval, is established by undoubted and independent evidence. Fourthly-Apart from such subsidence all rational explanation of many phenomena would seem impossible. While demonstrating the fallacy of the theory that all coral islands originate from the craters of extinct volcanoes, Mr. Dana positively asserts that all the Pacific coral formations have their bases on rocks of volcanic origin, tacitly leaving the same to be inferred in regard to all other formations. Yet there is no proof of this, and the facts given in his work, the fruits of his personal observation, render it very doubtful. Coral formations are constantly occurring on dead coral of a former period, and there seems no reason why they should not form on kindred limestone rocks, or, for that matter, on other rocky bottoms. That most coral rocks are immediately situated on rocks of volcanic, or rather plutonic, formation, is probably true, but this merely proves at what an early stage in the world's history the polyps came into being. That the original base of all coral rocks is plutonic is doubtless true, but then the statement would have no meaning, as the same is true universally of all rocks; that they are immediately based on such rocks is an unwarranted generalization. But we are not left to mere conjecture on this point, as there are existing facts in contradiction. himself partly attributes the luxuriant development of the immense reefs of New Caledonia to the fact that the coral formations occur on metamorphic rocks. His language is: "This surprising extent is partly explained by the fact that New Caledonia is not a land of volcanoes, but, on the contrary, consists of older metamorphic rocks" (page 208). And yet two pages further on he says: "At whatever time the existing reefs in the Pacific commenced their growth. they began about those of the igneous islands, whose fires had become extinct. * * * Those lands whose volcanoes still burn are yet without corals, or there are only limited patches on some favored spots. Zoophytes and volcanoes are the land-making agents of the Pacific. The latter prepare the way by pouring forth the liquid rock, and building up the lofty summit. Quiet succeeds, and then commences the work of the zoophyte beneath the sea."

It is curious how one error produces another. To explain the formation of the immense barrier reefs of the Pacific, on the theory that they originated in volcanic islands, he is forced to make a generalization, which, two pages previous he has proved to be erroneous in the case of one of the largest barrier reefs in the world. There is some reason to believe that many of our secondary and chalk limestones are to a great extent of coral origin.* The fine coral weed washed from the Bermudas cannot be distinguished from English chalk; and in the

^{*} See Lyell; also, Darwin and Dana.

Sandwich Islands is used on the blackboard in schools.* The limestones of the Alps and the Pyrenees, three or four thousand feet thick, are to a great extent made up of coralline and shelly matter.† In the Missouri valley as perfect specimens of coral are found as can be obtained in the Pacific. The interior of New Jersey and North Carolina, fifty miles inland, also exhibit remains of coral formation. These facts show that, when the average temperature of the globe was higher, coral formations were even more extensive than at present, and they are at this early period seen to be adjacent to large bodies of land. The coral animals will not exist in water whose average temperature is under 68°; hence they are generally found within the tropics. Their presence as far north as the Bermudas is probably due to the influence of the Gulf stream. On the western side of the Pacific the range of latitude seems to be still higher, extending to the southern extremities of Japan and Corea, doubtless from the influence of the Kubo Sama or great Pacific warm current.‡ In the warm waters of the Mediterranean, heated by African winds, coral is found abundantly. On the other hand, coral formations are comparatively rare on the eastern sides of the Atlantic and This is due to various causes. First, the recent or actual presence of violent plutonic action in Western Africa and South America. In the latter, eruptions and earthquakes are still common, nor have they by any means ceased in Western Africa. In active volcanic regions zoophytes do not exist. Thus they are not found in Hawaii, though abundant in the western Sandwich Islands. In the Navigator Islands coral abounds everywhere except in Savaii, which abounds in extinct craters, and gives every proof of being the last seat of volcanic action. The volcanic fires must slumber for ages before the unerring instinct of these little animals will allow them to congregate in such vicinity. The reason is, that submarine eruptions are frequent as long as a volcano near the sea is in action,

O Lieut. Nelson; see Dana, page 358.

⁺ Lyell, page 795.

[‡] Isothermal Charts of Ocean; Dana and Darwin.

and these heat the water, destroying all life in their vicinity. After such eruptions it is common to see dead fish thrown in great numbers on the beach. Such an occurrence took place recently in a volcanic eruption of Mount Kilauea, in Hawaji, which, indeed, is only a repetition of what has been noticed in all the observed eruptions of this great volcano.

Another reason for the scarcity of corals in those places is the presence of the cold polar southern currents on the eastern extremities of the Atlantic and Pacific. tend to within a few degrees of the equator. Westward currents in both oceans also have their effect. On the eastern Pacific shore the coral range hardly extends to the south of the equator, the southern limit being the southern coast of Ecuador. The violent earthquakes and eruptions characteristic of this region sufficiently explain the above, but the cold water current from the south also has an effect. This is evident from the fact that a little further west the limit does not even extend to the equator. Thus the Galapagos Islands contain no coral, and actual experiment proves a comparatively low temperature of the surface water in that vicinity.* Its northern limit is the southern extremity of Lower California. In the eastern Atlantic the southern limit is 5° south, the polar current not allowing it to extend any further, while the northern limit extends no higher than 10° north. This is caused by the large rivers and rocky shores of Senegambia, and further north by the drifting sands from the great African desert. These are the chief causes of the limit in this direction. Thus at this period the coral growth is confined to the torrid and warm temperate regions of the earth, and even within these limits it is modified by plutonic action, cold currents, mighty rivers, and sandy or deeply shelving shores. The latter causes account for the scarcity of coral in the north-eastern shores of South America, and the Asiatic coasts of the Indian Ocean. The zoophytes would seem to have a natural preference for ex-

^{*} Captain Fitzroy, R. N.; see Dana, page 300.

tinct volcanic rocks, perhaps because these formations usually contain springs impregnated with carbonate of lime.* The ocean contains every substance found in the composition of coral. The lime exists in the form of sulphate, which the digestive power of the polyp assimilates, converting it into a carbonate. The carbonic acid for this purpose exists throughout the ocean in solution, and performs another part in the formation by cementing the fine coral sand and other detritus, which fill up the pores of the original zoophytes. It acts on this sediment precisely as the carbonic acid of the atmosphere acts on the cement and mortar used for building purposes, and the same hardening is the result, aided still more by the compressing action of the waves. Perhaps the sulphate of lime or gypsum may contribute to this solidifying process. The carbonic acid in the ocean is mainly derived from three sources. First, that which is deposited from the atmosphere by rains. Secondly, that which is derived from the respiration of all animal organism, however minute. Thirdly, the result of the decomposition of all vegetable or animal debris, whether existing in the ocean or obtained from the land through rivers or showers of rain.† Coral is composed almost wholly of carbonate of lime; in some specimens there is a small percentage of carbonate of magnesia. In nearly every instance there is a very small proportion of phosphate of lime, and sometimes traces of silica and fluorine. The cause of the delicate tint of the rare and costly rose-colored variety is said to be due to the presence of iron; an analysisleaving a ferruginous sediment, particles of which are readily attracted by a magnet. For many hundred years the precious coral has been gathered from the rocky bottom of the Mediterranean and its islands. The grounds from which it is obtained are systematically divided, so that a given spot is visited but once in ten years. The instrument usually em-

^{*} So Lyell, from whom Dana differs; first, because facts do not require it; second, because Hawaii and other Pacific regions in action have no carbonic acid.

[†] See Dana, pages 354, 355.

Besides the Mediterranean Sea, the Persian Gulf is also noted for its coral fisheries, which supply most of the precious coral to Hindostan. It is found, too, off the coast of In China precious coral is valued highly, both the red and white varieties being worn as insignia in the shape

of balls in the caps of high official dignitaries.

The three principal colors found in corals are red, white and black, but there are innumerable intermediate tints. The tesselated pavement of some of those lagoons and grottoes, in the distant Southern seas, are said by travellers and voyagers to be gorgeous beyond description. The watery bed is laid with coral mosaics, black, white, red, orange, yellow, blue, in fact every conceivable color, and all of the brightest hue; while along the glittering floor, fishes of hue equally bright flash along in the sunshine. Occasionally, in the depths, grottoes of

Dictionary of Commerce.

more than imperial splendor may be seen through the transparent waters. They seem like palaces built of the costliest gems, the dwellings of the Naiads, and when the sunlight glances on them, kindling their varied hues amid the play of the bright waters, the effect beggars description, and more than realizes the conceptions of the fabled palaces of the genii. Thus these apparently insignificant little creatures not only achieve results which men cannot dream of attaining, but create a beauty which the most refined human taste can scarcely conceive and utterly fails to imitate.

Nor is this fairy scene of enchantment dedicated to the enjoyment of the rich, the cultivated, or the proud, but is freely laid before the rude savage, whom we in our pride despise. Though the savage may not appreciate it, still it is there, and by a law of compensation he may receive this as we receive many blessings of which we are equally unappreciative. In our arrogance and insolence we may argue, that the rude islander has no right to this unprized blessing; that on him it is merely thrown away like pearls before swine. But perhaps it is one of the greatest of our boons, that, while the narrow-minded selfishness of humanity tends naturally to monopoly, the Architect of the universe thinks otherwise. One or two other reflections are in place here. Though these animals are among the very lowest in the scale of creation, they have, without any consciousness on their part, effected the most stupendous changes on the surface of our globe; nor has their agency yet ended. Perhaps, like them, we ourselves, at this moment, may be effecting great changes, in regions unknown to us and among other higher organisms of which we have no conception; but, in any event, it is our duty to act our part as we best know how. Again, the changes effected by these minute organisms, for good or evil, are utterly beyond our control; nor can we modify their action any more than we can save one microscopic creature from destruction by another. This should teach us how utterly futile our greatest efforts must be to modify, in the slightest degree, the purpose of that Being, who, amid His innumerable and boundless fields of operation, never neglects for a moment any detail; who regulates alike the motions of the innumerable suns twinkling in space, and the pulsations of the tiniest animalcule; who never pauses in his work, and whose work never ends.

ART. II.-1. Works of JOHN STUART MILL. London. 1873.

- 2. Works of Louis Agassiz. Boston. 1856-1873.
- 3. Life and Works of John Stuart Mill (Memorial Volume). London. 1873.

Comparative biography presents no more interesting and profitable study than that which is found in the lives of John Stuart Mill and Louis Agassiz—lives that were passed in the philosophic and scientific activity of the nineteenth century. In modern times men of great attainments, powers, purposes, endeavors, and successes meet the view of the observer on all sides. Genius, too, is not unknown, for the firmament of the present age glistens with bright names. The difficulty is in deciding who is great and who is not. But there are few, if any, to dispute the statement that Mill and Agassiz were great men—in themselves, in their works, and in the relation which they sustained to their own and subsequent periods. And it is as refreshing and ennobling to examine and compare the lives of the dead great, as it is sad and regretful to contemplate their loss to the world by death.

Mill and Agassiz were alike, then, in that they were both great; they possessed that abundance and multiplicity of personal power and resources which characterize greatness, and which place him who is great in the attitude of a ruler or teacher of mankind. The greatness of Agassiz was of the sympathetic kind; his influence was present and personal; virtue went out of him at every point of contact.

Those who knew him, personally, were his most devoted followers and persistent defenders. The warm, indefinable influence which acts principally upon the emotions, Agassiz possessed in a high degree. His readers felt his greatness less than his hearers, and his power was great in proportion, as it were, to the proximity of his person. Mill's greatness, on the other hand, was not of the immediate sympathetic character which requires the presence of the great man to make it felt by the admirer. The readers of Mill are fuller of admiration for him than his acquaintances and hearers. He could not be brought out by the ordinary circumstances of life, but reserved the exercise of his enormous powers for his meditative and strictly private moments. The greatness of Mill reached the world, not by contact, but through the medium of literature and reflection. The admirer of Agassiz felt his greatness, and the effect was instantaneous. The admirer of Mill came to a knowledge of his greatness by a reflective process. The effect of Agassiz's greatness was magnetic and emotional; that of Mill's was gradual and intellectual. Hence Agassiz was popular, Mill profound; the former was a general favorite, the latter a friend of the few; the former was appreciated at first, the latter only after being studied.

The difference between these two types of greatness depends upon various causes, which will appear as the discussion of the character and works of these remarkable men proceeds. An examination of the mental composition of Mill reveals the fact that he was pre-eminently of the intellectual temperament. Being trained from infancy in the study of the classics, mathematics, and metaphysics, under the guidance of a supremely logical teacher, his father, his naturally intellectual temperament was developed, and the emotional nature, being without stimulus or exercise, was left to languish. Mill tells us, in his autobiography, that his father was particularly averse to all exhibitions of what is called "feeling." The education of the child was, therefore, in accordance with the intellectual method, and with the idea that man is an intellectual being.

When he was able to direct his own studies and progress he seems to have inaugurated no change in this method, but found it in complete accord with his maturer wishes and tendencies. In consequence of the severe and varied intellectual discipline to which he subjected himself, he came to be, and to be regarded, the most "elaborated intellect of his time." Every faculty involved directly or indirectly in the reasoning processes was cultivated to the highest point. He became perfectly familiar with the principal works of philosophy, history, the classics, criticism, jurisprudence, politics, and studied art, poetry, and religious systems for intellectual effect, Mill thus became strictly a thinker. He was, it is true, a person of asthetic and ethical potentialities, but they were always subordinated to intellectual purposes. The judgment was the determining factor in all his mental products.

Not that Mill was not humanitarian or philanthropic—his works on "Political Economy," and "The Subjection of Women," and his literary and parliamentary efforts for the education and elevation of the people, show him to have been both an admirer and a lover, in some degree, of mankind. But his philanthropy was of the cool, calculating, unfeeling sort that excites no enthusiasm and incites no fanaticism, or sacrifice, or martyrdom. Such an intellect commits or allows no excesses in action, it hastens no crisis, counsels or causes no sudden revolutions. But notwithstanding the constant suppression of the feelings in the culture and life of Mill, the emotional element in his nature seemed to gather in a single spot and break forth in a devotion simply romantic for the woman who became his wife. In this exceptional respect the philosophic Mill vies with the poetic Plutarch and Horace. But the characteristic qualities of Mill's mind were clearness, directness, strength, persistency, breadth, and profundity, forming an absolutely complete organ of intellectual power.

In many respects the psychological character of Agassiz was the reverse of that of Mill. Born of an emotional ancestry, on the continent of Europe, nurtured and educated under a mother's tender care, Agassiz was, by nature and

early education, an emotional person. His life was normally an outward instead of an inward life. Having a tendency toward the natural sciences, he early embraced their pursuit, and during all his subsequent career he pursued them with ardor. The intellectual faculties, which were in him and which this kind of life developed, were memory, perception, and a primary power of generalization, the three faculties essential to the scientist. But he pursued truth for the love of it, and not for the purposes of mental culture. A self-disciplinarian he was not; and he was particularly deficient in what is ordinarily called "method." He had friends without number, and his emotional nature unfolded itself constantly in society and among his scientific companions. The great sources and activities of his life were in the region of the feelings. But Mill used his advantages as a means of selfculture, while Agassiz studied natural science from a noble curiosity and a love for his work. Mill was reflective, Agassiz was perceptive; the former desired facts as a supply of mental food, the latter sought facts for the sake of having them; the former esteemed the Ego, the latter was occupied with the non-Eqo; the former rolled the universe in upon himself, the latter opened himself outward upon the universe. Mill was a thinker, Agassiz a discoverer; the former absorbed his work, the latter was absorbed in his work.

Perhaps there is no respect in which these great men differ more widely than in the spirit in which they conducted their life-work. Mill's supreme endeavor was to develop himself, to evolve the Ego according to the proper law of development. For this purpose he seemed to accomplish those magnificent achievements in philosophy and criticism which filled the thinking world with his fame; for this purpose it would also seem that he turned his attention to social science and elaborated those schemes for the benefit of his fellowmen which have gained the profound regard of statesmen and publicists in all enlightened lands. It was the constant consciousness of self in his work, combined with an equally constant consciousness of the character and relations of his

work, that made it of such infinite value to himself, and distinguished it, in an important respect, from that of the great naturalist.

Self-forgetfulness, simplicity, and impulsiveness were the characteristics of the work of Agassiz. He studied embryology because it was congenial; he made geological and zoological excursions because he felt so impelled. No ulterior end seemed to present itself, in view of which he should make those immense acquirements of scientific truth which are the admiration of the world. He seemed to be the embodiment of an unconscious, impersonal force—a force seeking expression through the organism of him, and rendering him the fortunate instrument of discovering new and important fields in the domain of a grand science. He lacked that poise and self-consciousness which characterized the great philosopher. Mill was the more personal, Agassiz the more impersonal, in thought and life. And yet the personality of Mill was of such a character that it comprehended the impersonal. The type of mind which Mill possessed was of a later development than that of Agassiz. An habitual selfconsciousness is, as every psychologist has observed, the latest product of psychical evolution.

It is not for us to decide whether an habitual self-consciousness is the highest product in mental development, but it is certainly the last in the order of the development of our mental states. Men of genius, men of one idea, enthusiasts, never possess it; and, indeed, few great men of any type or age possess it. But this habitual self-consciousness was in Mill the concomitant of a strong self-hood—the concomitant of an habitual self-reliance—and this was revealed most remarkably in his attitude toward nature; he early learned to reject the common notions of the perfection of things and the constant regulation of nature and humanity by an overruling and supreme intelligence; he seemed to believe with the German optician, who declared that it would be a poor optician who could not make a better eye than nature had made, with like materials and advantages. In his Autobiography, p. 39, he

tells us that his father "found it impossible to believe that a world so full of evil was the work of an Author combining infinite power with perfect goodness and righteousness." And he states this belief with apparent approval. Again, in the same work, p. 186, in speaking of his subsequent wife, he says:

"In her complete emancipation from every kind of superstition (including that which attributes a pretended perfection to the order of nature and the universe) * * * resulted not from the hard intellect, but from strength of noble and elevated feeling * * "

In all such respects Mill was in complete accord with his father and his wife. Mind and matter were subject to law, but a supplement to those laws could be made, and it was the province of man to work out the improvement. reliance is exhibited in all the life and teachings of Mill. He stood in the midst of the teeming, throbbing, immense universe, unawed, confident, bold, master of the situation, and author of his own advancement and salvation. He sought to inspire his fellows with equal independence and courage. He inculcated the utmost freedom in thought and life, but he still believed in a freedom allied with order and governed by law—law inaugurated and devised by the best intellect in the state. But Mill was never afraid in the dark; he always carried his lantern, reason, and never imagined hobgoblins or dangers. Obscurity never terrified him either in fact or in philosophy, for he possessed a firm hold upon the known, the

^{*}It is a remarkable fact—but not unusual with men of transcendant ability—that with all his faith in himself. Mill had not much faith in mankind. In his work "On Liberty," he regards individuality as one of the elements of well-being. "In this age the mere example of non-conformity, the mere refusal to bend the knee to custom, is itself a service. Precisely because the tyranny of opinion is such as to make eccentricity a reproach it is desirable, in order to break through that tyranny, that people should be eccentric. Eccentricity has always abounded when and where strength of character has abounded."—Id. p. 129. But "the general average of mankind are not only moderate in intellect but also moderate ininclinations; they have no tastes or wishes strong enough to incline them to do anything unusual, and they consequently do not understand those who have, and class all such with the wild and intemperate whom they are accus tomed to look down upon."—Id. p. 133.

positive, and the definite. For the indefinite, the infinite, the unknowable he had little or no interest and no fear, believing that whatever could be could not be contrary to experience. This self-reliance and individuality, combined with his extraordinary attainments and analytical power, made him the greatest critic of his time, for criticism involves both self-confidence and knowledge.

But Agassiz was not self reliant or independent in the sense in which Mill was. Agassiz was both self-reliant and independent in the sense of being able and willing to do what he attempted without assistance, but not in the broader and more complex sense of being a perfect conscious master of his internal as well as external activities—not in the sense of not needing sympathy and emotional support. Agassiz looked for sympathy and support everywhere, in humanity and in nature. He found this in humanity; he thought he found it in nature. In his first great work on Fossil Fishes he says:

"An invisible thread in all ages runs through this immense diversity, exhibiting, as a general result, the fact that there is a continual progress in development ending in man, the four classes of vertebrates presenting the intermediate step, and the invertebrates the constant accessory accompaniment. Have we not here the manifestation of a mind as powerful as prolific? the acts of an intelligence as sublime as provident? the works of goodness as infinite as wise? the most palpable demonstration of the existence of a personal God, author of all things, ruler of the universe, and dispenser of all good? This, at least, is what I read in the works of creation."

Unlike Mill, he found perfection, supreme intelligence, harmony, everywhere. He said, if this is not beauty and truth and wisdom, where can it be found? He seemed not to think of his own mind as a well-spring of inspiration, or guiding intelligence, or sublime wisdom. He leaned upon the non-Ego, and drank in joy and knowledge from the universe. The attitude of Agassiz toward nature was therefore essentially different from that of Mill. The inquiring naturalist sought not only scientific truth but being and personality, and he clothed nature with even a poetic garb. He believed

in the presence of a conscious mind ever at work in nature, and with this mind he seems to have held converse—upon it he seemed to rely. He wanted to be taught by nature, not to control it; he wanted to find out the ways of nature, not to improve upon them.

How much these two men were influenced by their disposition in respect to self-reliance is illustrated in their religious attitude. Religion, being subjective, depends upon the temperament and education of the subject. Mill, finding sufficient in himself and in the attainable, was both by education and by nature prepared to reject all forms of religion, and not to trouble himself with the great unverifiable cause or support of the universe. He, therefore, had no deep religious sentiments, was not religiously inclined, and did not encumber himself, as he would express it, with either an uncertain theology or a useless religious creed. His position was rather a negative one, and not that of dogmatic atheism. On the contrary, Agassiz, with less self-reliance and with a religious parentage, was naturally religious. He was constantly and unconsciously seeking for something in the environment to rely upon. Being sympathetic, he was ever automatically peopling the external world with beings with which he could be in sympathy, and nature was not simply a succession of phenomena, but real and substantial, and personal and intelligent, and even conscious. Agassiz was naturally a great preacher; he infused so much of the religious and poetic sentiment into everything he did that it became apparent to all. As when he inaugurated the school at Penikese, it is reported that, at a point in the exercises, he said, "We have need of help here; let us pray," and they all engaged in silent prayer. It was the religious sentiment that was manifested in all of Agassiz's attacks upon the Evolution theory, because it seemed to him to divest nature of personality, mind, and consciousness, and place it in the light of an automaton, an unconscious impersonal force.*

^{*}That the Evolution theory is not atheistic we have the testimony of the greatest exponent of the theory, Herbert Spencer, who states that Mind

But as Mill was irreligious and Agassiz religious by temperament and education, so the former was an experientialist, and the latter a transcendentalist, by temperament and education. Mill said, when we see matter and organism we see all that we care to know. But Agassiz said, when we see matter, and nature, and organism, we are impressed that there is, within, a spirit which originates, guides, and sustains all—a spirit which we can know, and feel, and possess.

And this brings us to the consideration of the speculative tendencies of these two great minds. Notwithstanding the fact that Mill was largely occupied in the domain of speculative philosophy, he was not naturally speculative. Of course, he became familiar with all theories of any account, but he

and Matter adhere in an Ultimate Reality which is God, implying a God which is the sum of all personalities and impersonalities, and greater than either the conscious or the unconscious. In a collection of his Essays entitled "Recent Discussions in Science, &c.," he says: "I conceive, on the other hand, that the object of religious sentiment will ever continue to be that which it has ever been—the unknown source of things. * * * *

Having, in the course of evolution, come to have for its object of contemplation the Infinite Unknowable, the religious sentiment can never again (unless by retrogression) take a finite knowable, like humanity, for its object of contemplation." "Reasons for dissenting from Comte," id. p. 129-In commenting upon "Mr. Martineau on Evolution," he says: "Mr. Martineau tacitly represents them" (the Evolutionists) "as believing that when everything has been interpreted, in terms of matter and motion. nothing remains to be explained. This, however, is by no means the fact. The doctrine of Evolution, under its purely scientific form, does not involve Materialism, though its opponents persistently represent it as doing so." Id. p. 347. "I fail to perceive humility in the belief that the buman mind is able to comprehend that which is behind appearances; and I do not see how piety is especially exemplified in the assertion that the universe contains no mode of existence higher in nature than that which is present to us in consciousness. * * the religious sentiment may find its highest sphere in the belief that the Ultimate Power is no more representable in terms of human consciousness than human consciousness is representable in terms of a plant's functions." Id. p. 349. Many of the eminent opponents of the doctrine of Evolution admit that it is not atheistic. The Duke of Argyle says: "It is not in itself inconsistent with the Theistic argument, or with belief in the ultimate agency and directing power of a creative mind." "Primeval Man," p. 42. "So far, therefore, as belief in a Personal Creator is concerned, the difficulties in the way of accepting this hypothesis are not theological." Id. p. 44.

acquired them as an addition to his knowledge or for the purposes of criticism. His "System of Logic" is mainly a discussion of the laws of thought and the foundations of philosophy; while his other philosophic works take the form of criticisms on systems from which he dissents. He was not an inventor, but an expounder and critic, of hypotheses. And yet such was his regard for speculative thought in any well-presented form, that he at one time offered to render pecuniary aid to an illustrious contemporary (with whom he disagreed on many points) to bring out a new system of philosophy. Agassiz was, however, naturally speculative, imaginative, and unconsciously traced effect to cause. His position as a discoverer was kindred to that of the speculator; and his "Glacial Theory," his "Method of Creation," and his paper on "Evolution and Permanence of Type," indicate the speculative tendency of his mind. But the psychological or speculative element in science is not unimportant or unusual. A kind and degree of speculation is as necessary to science as it is to philosophy. Science is that in which discovery leads and speculation follows. The greatest scientists have supplemented their scientific discoveries by speculative treatises, setting forth or combatting theories; and such is the universal respect for speculation, that even those whose scientific attainments are the most extensive and profound look upon their speculative efforts with pre-eminent admiration—considering their theories the greatest works of their lives, and their choicest treasures. Speculation is to science and thought what poetry is to literature and life—the very fountain and inspiration, bloom and fruitage. But the purely scientific or scientifico emotional mind is not well adapted to speculation. There is not sufficient comprehensiveness or complexity in a mind of this caste to make its philosophic reasonings of much value. Tried by the highest and severest tests, Agassiz's mind was not adapted to speculation. And we say this after due consideration of the popular estimate of Agassiz, an estimate which accords him equal ability as a scientist and a thinker. But the popular estimate of the great naturalist is founded upon the proposition that an individual who is great in one respect is great in all, a proposition which is as injurious as it is untrue. The estimation in which Agassiz was held by the speculative scientists of his time—an estimate, in one respect, quite the reverse of the popular estimate—is not to be taken as the true one without further examination. Speculative scientists decried Agassiz because he did not accept the theory of Evolution in its fullness. But an individual's ability is not to be judged by his acceptance or rejection of any particular theory. Newton advocated the Corpuscular Theory of light, and strenuously opposed the Undulatory Theory. But now the wave-theory is universally admitted, and the emission-theory has few or no adherents. So it may happen that in the coming time the theory of Agassiz and Von Baer, as to the origin of species, may have few or no adherents, while the theories of Haeckel and Darwin will be universally admitted; but Agassiz and Von Baer will not, on that account, be regarded as lacking in speculative ability. It is not the fact of the acceptance or rejection of a particular hypothesis which determines the ability of the individual; it is the manner of the acceptance or rejection. Agassiz did not possess the faculty of complex generalization. He was, of course, an adept at simple generalization and classification within his particular science. But outside of natural science he was incompetent, being unable to justly compare his own with other sciences, and to distinguish the true difference between physical and psychical facts. He constructed an admirable glacial theory, which required only the generalization of physical facts of the same or like orders. But when he came to reason about the evolution theory (in opposition to which he gave much of his later energies), which required a comparison and generalization of facts of extensive and varied orders, he failed to exhibit much logical ability. His main argument was sound enough—the argument of " not proven" -the argument which is ordinarily used, that species had not varied essentially within our geologic or historic knowledge. and that, therefore, we had no right to infer that they ever had varied.

In one of his lectures on the "Method of Creation," he expresses his belief, "that all these correspondences between the different aspects of animal life are the manifestations of mind acting consciously with intention toward one object from beginning to end. This view" (he says) "is in accordance with the working of our minds; it is an instinctive recognition of a mental power with which our own is akin, manifesting itself in nature. For this reason more than any other, perhaps, do I hold that this world of ours is not the result of the action of unconscious organic forces, but the work of an intelligent, conscious power." Again, in his paper on "Evolution and Permanence of Type," he says:

"The most advanced Darwinians seem reluctant to acknowledge the intervention of an intellectual power in the diversity which obtains in nature, under the plea that such an admission implies distinct creative acts for every species. What of it, if it were true? Have those who object to repeated acts of creation ever considered that no progress can be made in knowledge without repeated acts of thinking? And what are thoughts but specific acts of the mind? Why should it then be unscientific to infer that the facts of nature are the result of a similar process, since there is no evidence of any other cause?"

This argument expressed in brief is that, as the human mind thinks in special acts of thought, so the all-powerful mind in nature thinks in special acts of creation. A very illogical conclusion, unless we admit the similarity between a thought of the human mind and an act of creation, or that an act of the thing created is co-ordinate with an act of the Creator. The inability of Agassiz to carry on critical or speculative processes with anything more than mediocre success was combined with another fault or misfortune-that he never seemed to know what his critics said of him. It is not within the province of this article to discuss at length the speculative ability of Agassiz, but it is believed sufficient has been said to show the demonstrability of the proposition that, however highly the researches of Agassiz are to be esteemed, his argumentation and speculation are not of great value. But his philosophic contemporary, Mill, was truly in his element when engaged in discursive thought. This was universally recognized. So eminent and extraordinary was his discursive ability that many of his contemporaries regretted that he did not elaborate a complete and continuous system of philosophy, instead of spending so much time in the critical analysis of systems not his own. The secret of his course in this regard was doubtless what has been before stated, that he was not naturally speculatively inclined, although abundantly competent to construct an entire system of speculative philosophy.

Having considered the psychological characters of Mill and Agassiz, we pass to a comparative review of their works and the relation which they sustained to the world. And it may be well to observe here, that both of these illustrious men were exceedingly industrious. They were correspondingly prolific in their works. Men of genius are commonly said to be indolent; but if they ever become great they work. Great men, whether men of genius or not, are always busy men.

From Socrates, Plato, and Aristotle, to Comte, Mill, and Spencer; from Homer, Virgil, and Tacitus, to Milton, Shakespeare, and Scott; from Michael Angelo to Dr. Lesseps; from Pythagoras to Emerson and Carlyle; from Newton and Copernicus to Tyndall and Agassiz; from Solon and Lycurgus to Grotius, Mansfield, and Austin; from Handel and Mozart to Rubinstein and Liszt, great men have been great workers. It is the natural and only way to realize great possibilities. And it is interesting to contemplate the long, invisible, unconscious succession of great thoughts and deeds in humanity which culminated in bringing to life, consciousness, and personality in the same period two such individuals as Mill and Agassiz. Far different forces were at work—forces which demonstrate the magnificent evolving power and diversity of possibilities that are in humanity-forces which produce results that make the world proud of itself, and grandly expectant for the future.

Mill and Agassiz were unlike in respect to the departments in which they labored. The former was occupied with

the observation of the phenomena of mind and society; the latter with the phenomena of nature. They delved on opposite sides of the realm of investigation; they were at opposite poles of the globe of thought. Mill was a metaphysician, Agassiz a naturalist; the former was concerned in the psychical condition of the world, the latter in the physical condition. An examination of the comparative intrinsic merits of their works* reveals the fact that Mill's works were profound, logical, highly reasoned, elegant, and strong. Agassiz's works were descriptive, fresh, warm, sometimes even romantic; but the field in which Agassiz was so enthusiastic an investigator was comparatively new, and the discoveries which he made and assisted in making were so novel and striking that the description of them seemed like a romance, even without any embellishment. The fossils, the rocks, the bones which came to light at the touch of his magic wand made him appear in the light of the discoverer of a new natural world.

In Agassiz's department all appeals to the eye, to the

The published works of Agassiz are not so numerous; they consist of the following: "Fossil Fishes," "Nomenclator Zoologicus." "Bibliotheca Zoologiæ et Geologiæ," "Etudes sur les Glaciers," "Systeme Glaciere," "The Method of Creation," ** ectures: "Evolution and Permanence of Type," Essays; "A Journey in Brazil." &c.

^{*} The published works of Mill are as follows: "A System of Logic," "Political Economy," "Considerations on Representative Government," "On Liberty;" "The Subjection of Women," "Comte's Positive Philosophy," "Examination of Sir William Hamilton's Philosophy," the "Autobiography," and four volumes of Dissertations and Discussions on widely diverse subjects, viz.: "The Contest in America," "The Right and Wrong of State Interference with Corporation and Church Property." "The Currency Juggle," "A Few Observations of the French Revolution," "Thoughts on Poetry and its Varieties," "Professor Sedgwick's Discourse on the Studies of the University of Cambridge," "Civilization," "Aphorisms: A Fragment," "Armand Carrel," "Writings of Alfred De Vigny," "Bentham," "Coleridge," "M. De Tocqueville on Democracy in America," "Michelet's History of France," "The Claims of Labor," "Early Grecian History and Legend," "Dr. Whewell on Moral Philosophy," "The Slave Power," "Utilitarianism," "Thoughts on Parliamentary Reform," "Bain's Psychology," "Austin on Jurisprudence," "Plato." "Inaugural Address," at University, &c.

curiosity, to the imagination. The utility of the discovery is of secondary importance. A fascination seizes the beholder as well as the worker, and both mind and body are conducted with delight through the labyrinth of nature. And Agassiz possessed a marvellous power in making his way through the geological and zoological mazes which met him at every step. He possessed great penetration, memory, clearness, and quickness, and had a rare combination of ingenuity and persistency. These qualities, combined with his love for natural science, were the foundation of his magnificent success. But while newness and freshness characterized the domain in which Agassiz labored, there was a lack of these in Mill's domain. Not that the human mind and society are not constantly new in some degree. But all that was fundamental and elementary had been discussed and investigated long before Mill came to the study of psychology and sociology. All that he could hope to do was to carry the investigation a little further-at least, if the study of these philosophic sciences were to be conducted upon the old principles. Mill did not contribute much that was new to mental or social science. He became conversant with all that went before him, and then expressed his own critical views of its value with some suggestions and modifications. Mill is not to be esteemed according to the originality of his work; while Agassiz may be so esteemed without injustice. Mill is to be estimated rather according to the position which he occupied in the life and thought of the world, as his real work was not visible, but invisible. kingdom in which Agassiz reigned was the visible world, and the results of his administration are patent to the senses. No recondite mental process is required to appreciate the work of the naturalist; Agassiz is, therefore, to be estimated fairly by the visible effects of his life-work. The museum of Comparative Anatomy, at Cambridge, Massachusetts, is one of his greatest monuments, for it is a fitting representative of his labor.

But open a book written by Mill, and if you judge by what you see with the natural eye (and we make the sugges-

tion simply for the purposes of comparison), you find nothing to indicate superiority or power. But transfer the printed words to the mind, and, on reflection, you discover the great psychical influences which flow from the mind of the great thinker upon the human race.

The relations which Mill and Agassiz sustained to the common consciousness of their time were quite different. It will be observed that the common consciousness of the nineteenth century has not been so largely occupied with the investigation of psychical truth as of physical truth. There are fewer metaphysicians than scientists. During the lives of Mill and Agassiz the scientific period of the world had fully begun; not only had professional scientists begun to be numerous, but there had been aroused and rendered active a universal spirit of scientific inquiry; while philosophy, especially as conducted according to the old methods, was quiescent. Nevertheless Mill exercised a vast contemporary influence. Humanity is not satisfied at any time with the simple possession of facts. The human mind is so constituted that it must philosophize upon the facts which come to its knowledge. The position of a philosopher or a critic is always assured as among the very highest. The existence of criticism and philosophy in humanity is as essential and inevitable as the existence of observation The former supplement the latter. Mill was and science. the representative of all that element in the human mind which had begun to be dissatisfied with the prevailing systems of philosophy and education, and with a servile obedience to "authority." He voiced a large common consciousness when he inveighed against the extravagances of philosophy and called it back to the real and experimental. The hard, every-day facts of life were those upon which he based his views, and he thus commended himself to the judgment of a large portion of the thinking community. He was the head and front of all that large and increasing class of individuals who do not accept all they are told without limitation, and who wait for extended information before pronouncing judgment. His political and educational philosophy were usually conservative, and commanded respect among scholars and statesmen. place of Mill in the thought of his time was rivalled by that of Agassiz in the science of his time. With the exception of Darwin no scientist was better known or more discussed than Agassiz. He met a large part of that common consciousness which was awaiting the discovery of natural truth. He was in complete harmony with the most prominent aspirations of the age. He had assistance, sympathy, appreciation every-No difficulties were cast in his path. Unlike the great pioneers of science who endured martyrdom for its sake, Agassiz found a humanity fond of science and scientific men, so that the flowers of sympathy strewed his pathway, and everything which he asked for was furnished with unparalleled alacrity. Other men have been the favored of kings and princes, but he was the favored of the people. The heartiness and adequateness of the support which Agassiz received can not be attributed altogether to his personal power. He certainly occupied a favorable position in the common consciousness of his time. And this is why few men have ever been so thoroughly appreciated in their own time as Agassiz. He was a man absolutely in keeping with his time.

The difference between Mill and Agassiz in respect to their relation to their time may be thus expressed: Mill was in keeping with the special consciousness; Agassiz with the common consciousness; the former was the outcome and organ of the philosophic criticism, the latter of the scientific spirit, of the age. With respect to the past and future, Mill and Agassiz occupy widely different stand-points. Mill marked an epoch in philosophic thought, and so did Agassiz mark an epoch in scientific investigation, but here the similarity ends. Mill closed a long period of philosophic thought, a period which beheld Orientalism, transcendentalism, idealism, Plato, the Mystics, Fichte, Kant and Hamilton on the one side of a great philosophic question, and materialism, experientialism, positivism, Aristotle, the schoolmen, Des Cartes and Comte on the other side. Mill was, in fact, an experientialist; but philosophy on the basis of a pure examination of the human mind, philosophy either inductive or deductive, alone, had reached its culmination; and there has dawned a new era in philosophy—the era of synthetic or scientific philosophy. Mill found fault with transcendentalism because it affirmed too much, with positivism because it denied too much. He said, Your system is not true: it is only the product of your mind, the development of your own idea; wait for more facts, do not pronounce too quickly; the wise man does not decide nor conjecture unless he is compelled—he simply discusses. Thus was Mill the balance-wheel of the philosophic thought of the age.

Agassiz marks the beginning of an epoch—the epoch of natural science. He was not, strictly speaking, the first, but among the first. What Von Baer, Cuvier and Humboldt had suggested he fully inaugurated. He stood among the pioneers of zoological researches, the author of Icthyology and the founder of the Glacial system. He belongs, therefore, to the class of discoverers, founders, prophets. Thus he represents not only the advancing spirit of the present, but much of the future. Mill, on the contrary, belongs neither to the class of prophets nor redeemers, discoverers nor pioneers. He gathered up in himself the possessions of those who went before him, acquired the results of all science and all thought, and in so far represented the past. He belonged to the harvest-time of a vast period of philosophic thought. He garnered in the fruitage, and became the storehouse of an immense amount of learning, so when he discussed the relative merits of the classics and the sciences in education, in his inaugural address at St. Andrew's, he advocated the study of-not one, but both. He was one of the most learned men of his time and country; the sage of the period, the embodiment of the knowledge and culture of the ages.

From the brief comparative review of the character and position of Mill and Agassiz it will appear that, in the death of these men, the world has lost two of its chief representatives, and when we cast about we find none to fill their place. It must be that their particular work is accomplished—the

work of harvesting the thought of the past and sowing the science of the future. Others will doubtless do as well in the new work and new era. But the nineteenth century has no greater merit than that of producing Mill, the Thinker, and Agassiz, the Naturalist.

- ART. III.—1. Posthumous Fame—Oxford Prize Essays. MARSH, Oxford.
- 2. Philosophy, Universal History. Bunsen.
- 3. Geschicte der Philosophice (History of Philosophy.) Ritter, Berlin.
- 4. Lives and Maxims of the Illustrious Philosophers. (Περί βίων καί δογμάτων των έν φιλοσοφία εὐδοκιμησάντων.) By Diogenes Laertes.

By immortality, we mean, in this article, not the future condition of man, but the name for good or evil, which he transmits to future ages. We shall try to show what an accidental bubble such reputation too often is. The vanity and emptiness of human greatness, as a final test of real worth, has been a favorite theme with philosophers of old. In the ages in which they lived, so uniform and so universally accepted were their conclusions on this subject, that its modern demonstration might seem useless, were it not for the widespread and increasing prevalence of the opposite opinion. This opinion, so truly characteristic of our selfish and materialistic age, is, that genius is irrepressible, and that greatness and ability, under any disadvantages, are certain in the end to make their mark. This opinion is also characteristic of our age, in its arrogant assumption, that all the genius and ability we see is all that exists, and that if there were any more it would surely be brought to light. We are, in short, accustomed to overrate our knowledge, by complacently ignoring all that is unknown, as though it had no existence, and this is the greatest obstacle a new truth or a newly discovered fact encounters at the present day.

It may be assumed as an axiom that error of every description is prejudicial to the best interests of our race. Later on we propose to show the baneful influence of the above opinion on our social life; an influence which, if not arrested in season, may yet prove fatal to those very interests from which the error was originally derived. We may here remark that every age has advantages and errors characteristic of and peculiar to itself. For example, while the ideal and poetic age of Grecian philosophy intuitively leaped to the conception of vital truths, the wonder and admiration of future ages, it was replete with error in the conception and understanding of physical phenomena. In our time, while we have reached an exactness never before known in our knowledge of the material world, and are still progressing in that direction, we seem to be retrograding in a corresponding degree in our knowledge of mental and moral phenomena.

As a rule, men are now absorbed in their own special interests to the exclusion or sacrifice of the common weal, and, in the short-sighted grasping of the individual present, are wholly indifferent to the collective future. "Dulce et decorum est pro patria mori" was not a mere idle sentimentality of the ancients, as the mighty shades of Codrus, Leonidas, Themistocles, Decius, Emilius Paulus, with the unknown dead of Thermopylæ and the self-devoted Roman senators massacred by the Gauls, abundantly attest. "Swearing to one's own hurt and changing not," was no idle abstraction, but a stern reality with Lycurgus, Aristides, Socrates, Brutus, Regulus, and hosts of others. It must be remembered, too, that these men had no supernatural revelation to guide them in the comprehension and practice of these grand ethics, yet their great spirits grasped the truth with the force of a thorough conviction, so clear was their perception that nobility of soul surpassed in value every earthly boon, and that stainless honor was a greater blessing than a tarnished life. Still men such as these, untainted with modern selfishness, clearly realized the truth, that an honored immortality of their names was in their case a mere accident, and that qualities equal to the finest they illustrated had either not been developed for lack of opportunity, or had, after performance, been swept away in the Lethean flood of oblivion.

Nature is affluent in her provision for all emergencies. Though the greater part of the pollen of flowers be swept away by the winds of heaven, enough remains to fulfil the purposes of their creation and reproduction. Though many a flower fades unseen, and many a fruit runs to seed unused, enough remains for the delight and sustenance of man. Though many a giant tree spreads its magnificent branches unseen in the pathless forest, we must not hence conclude that it is created in vain. When such are the facts in regard to productions, needing no development but what is common to all. namely, light, air, water, etc., who shall assert the contrary in the case of mental growth or development, where extraordinary conjunctures of circumstances in extraordinary times, stimulate and develop with more than hot house growth alike the grandest and basest passions of our nature. We may here observe that there are various kinds of immortality among men. There may be an immortality of glory, an immortality of shame; there may even be an immortality of insignificance or folly. Some three thousand years ago or more, a ravenous eagle swooped down from the Idean mountains in Asia Minor, caught in its cruel talons a lovely boy, the royal heir of a petty kingdom in that region, and disappeared with its prey. The afflicted monarch was assured by his priests and courtiers that his beautiful babe was borne upward to Jupiter, the king of the gods, who, being fascinated by his beauty, sent his messenger to convey him to the skies, that he might dwell there forever as the cup-bearer of the immortals, and this infant's name lives in history forever.*

⁹ Virg., lib. i; Homer, Hesiod, et alii.

An ancient queen, with tresses of unusual beauty, dedicated them to her god in case her husband returned safe from an expedition, and duly performed her vow. Soon after, they were, through the carelessness of the priests, either lost or stolen. To appease the wrath of the king, the astronomers declared that the messenger of the gods stole them from the temple and bore them to the skies, and from this incident the name of that queen has become embalmed in a starry constellation forever.*

A Roman embassy, sent to the city of Tarentum in Magna Græcia, was grossly insulted by the rabble, and a wretched, drunken buffoon smeared the toga of one of the ambassadors with filth. Amid the jeers of the mob, the Roman noble, extending his toga and shaking it at them, declared that the vile insult should be washed out in their blood. The beastly action of this miserable man, whose name, we believe, by one of the mere chances of history is not preserved, led to some of the most momentous consequences in the history of the human race, including three protracted wars between the two greatest powers of antiquity; and the blood that washed that toga flowed for over 130 years in a prodigal and almost continuous current.

The incendiary who destroyed the temple at Ephesus for the sole purpose of engraving his name on the tablets of time succeeded in his design. The presumptuous philosopher who flung himself into the crater of Etna, hoping to be regarded by his deluded followers as a god who disappeared from the eyes of men, though he failed in his real purpose, has yet secured an immortality of folly and fraud. Even the caprice of a tyrant for a brief hour at a banquet has immortalized a man whose name would otherwise have been consigned forever to oblivion.‡

If necessary, we might multiply incidents of this kind, more than enough to transcend the bounds of this article, or

Rollin, Plutarch. † Liv., b. xii: Synop. Keightley's Rome ‡ Life of Dionysius, Plut. et alii.

[&]quot;OL. XXVIII. -NO. LVI.

even of a bulky volume, but the above are quite sufficient. Tyrants like Nero or Domitian, imbeciles like Sardanapalus besides hosts of others who have been immortalized by the mere eminence of station, without any merit of their own, illustrate, even to a very moderate intelligence, the emptiness of human greatness, so far as they are concerned. In many cases their very unfitness has signalized their immortality by the terrible disasters to themselves or others, occasioned by their weakness or wickedness. It is a fearful consideration that persons such as these should have power, by virtue of their station, to play their fantastic tricks. It is mysterious and melancholy to reflect that, while the weakest of us have an almost boundless capacity for mischief and evil, so few of us have a capacity, and that limited at best, for promoting the welfare of others. While a semi-idiot may destroy in a few brief hours the labor of years and the pride and glory of centuries, the most gifted can promote the welfare and progress of our race only by the most laborious or the most painful efforts. So much the more ought we to honor and cherish the memory of those grand heroic spirits who have left their impress for good indelibly stamped on the tablets of time.

So far we have only touched upon part of our subject, for it is obvious that the mere fact of the attainment of immortality by the weak, the wicked, or the foolish, does not disprove the assertion that genius will always make its mark and leave its impress on its age. True it is we all exert an influence more or less, and it may not be the less efficacious because it is silent. But this is not meant by the saying in question, the idea being that genius and ability will always be signally and conspicuously manifest in the eyes of men. Nevertheless, this opinion is as erroneous as the other, and has wrought a great mischief in the popular conscience. For, by a natural confusion of ideas, many think that because all men of ability achieve success, all who achieve success are therefore men of ability and deserving of commendation. The result is seen in a deplorable perversion of the public conscience; success in life being regarded as the only proper end of man. The consequence is that all means, however debasing, however unscrupulous, however searing to the conscience and withering to the moral growth of the individual, are frequently resorted to in the mad race for what is called success, and when the goal is attained the successful man too often receives the applause and respect properly belonging to the man of worth, principle, and conscience. It is true that a certain amount of intellectual force and energy is usually exerted in attaining this goal. Yet, did they depend on this alone, they would never emerge from the obscurity in which many abler and better men lie hid. Their notoriety is chiefly due to qualities far more ignoble, namely, loud self-assertion, a certain pachydermous insensibility to rebuff and insults. which promotes persistence of purpose, and a peculiar impudence, vulgarly called "cheek," and for which we know no better term. True genius and ability are cast in a far different mould, being usually modest, retiring, and only brought out when circumstances imperatively call for their exertion. True worth and genius the poet aptly compares to the modest violet, which

> "Needs to be sought, nor with obtrusive air Demands those honors Nature bade it share."

It is far more at home with Cincinnatus at the plow, than with the demagogue Cleon at the rostrum.

When men of this stamp, however, are by force of circumstances brought forth to public view, the heaven-given nobility of their nature is instinctively recognized by all, and, almost without effort, they command by force of their innate qualities a meed of respect and admiration altogether unattainable by men who are successful through accident or the display of more ignoble qualities. In all great crises of history we find that men for the crisis invariably appeared, and in most instances we find their appearance on the stage due to accident alone. The hero who stayed the tide of Oriental conquest, practically saying to the Persian invader, "Thus far shalt thou come and no farther," was a petty governor under the Persian

king, and even served in his campaign against Scythia.* Subsequently obliged to flee for his life, he became a citizen of Athens, and in the glorious battle of Marathon won for himself and his fellow-citizens an undving fame. Yet, if his disaffection to the eastern despot had remained undiscovered, he would probably have lived on in his government in ignoble ease, while another name, now buried in obscurity, might have shone as a star of the first magnitude. A man who meekly bore the murder of his father and the confiscation of his property, and who to save his life passed for a fool, roused by the outrage and death of the chaste Lucretia, exhibited himself as a destroyer of tyranny and a very incarnation of freedom. From that hour he seemed to become transfigured in heart and soul; his very name of fool (Brutus)† became a beacon and warning to tyrants of all ages, and after displaying undaunted heroism and other qualities of the very highest order, he at length perished gloriously on the battle-field, fighting for the freedom he had gained for his native land. Yet, had no such crisis occurred, who can say that this Brutus would not have fretted away the remainder of his life, purchasing an ignoble existence at the expense of honor and selfrespect, entirely unappreciated and himself unconscious of the grand qualities he possessed. So far can the noblest natures suffer and stoop under the pressure of an iron necessity.

The names of Harmodius and Aristogeiton have become immortal through their avenging an outrage perpetrated against them by the tyrant of Athens, and though they perished in the act their names at once became enviably conspicuous in the records of fame. Till then lost in the countless masses of obscure humanity, in one brief hour they became synonyms of freedom to the human race for ever.‡ Yet, if they had not personally felt the despot's iron heel, who can doubt that they would not be, like the common mass of humanity, forgotten and unknown? The foundation of the Parthian empire was due to a similar cause. An infamous outrage perpetrated by

^{*} Hero-l lib. iv.

the Greek governor caused his assassination by a brother's hand, and that brother's name thenceforth became indelibly stamped on the world's history, by the foundation of an empire destined less than two centuries afterwards to bring to a full stop the onward career of the Roman power, till then irrepressible.*

Our readers are doubtless well acquainted with the story of William Tell, who was summoned into fame by the unreasoning tyranny of a governor, who himself became immortalized by his elevated station, and still more by the fantastic tricks of tyranny his station allowed him to perpetrate. grand self-devotion of Arnold Winkelried, in the same cause, is also a familiar tale. A personal insult offered him by an insolent English officer of rank, after the subjugation of his native land, and the condign punishment he inflicted for the same, first spurred on Sir William Wallace to his great achievements, and showed his mighty spirit the pathway to fame. Otherwise his modest nature would probably have induced him to live and die in the quiet seclusion of a country gentleman's life. The histories of Cortez, Pizarro, and even of the great Columbus himself, illustrated in the same manner the curious accidents of fame. Had there been no Isabella of Castile, the latter would probably have sunk beneath his difficulties. Had the mutineers secretly thrown him overboard, as they intended to do, he would have been heard of no more, or had his course been slightly different, he would, according to the promise given his crew, have returned to Spain unsuccessful and disgraced; and seven years later the accidental discovery of Brazil† by the Portuguese Admiral, Cabral, would have given him all the honor and renown that a greater man had failed to win. Were the development of genius independent of outward circumstances, we would not see it coming to light so uniformly in favorable conjunctures, or in critical periods that try the souls of men. Mental and moral qualities, like physical productions, need the richest soil and

^{*} Rollin.

Herrera, Prescott.

the highest cultivation for their finest development. Genius of the highest kind may, at this moment, lurk undeveloped in the remote islands of the sea, in arid sandy wastes or dense forest jungles, but, lacking development, is as barren of result as seed sown on a rock, corn planted in a desert, or acorns flung on a mountain of ice. The slightest layer of soil on a rock may cause vegetation to come forth; the unexpected gushing of a spring may spread fertility in a desert, and a minute deposit, even on an ice mountain, may diversify its appearance with a bright, mossy verdure. So likewise, despite the unfavorable circumstances of savage life, bright sparkles of

genius are occasionally enabled to appear.

In our own history the names of Pontiac, Tecumseh, and Osceola clearly prove, that in the Indian character, cropping up above the disadvantages of a savage life, dwelt possibilities of the highest and noblest genius. The recent exploits of the Modoc chief, tarnished as they have been, we were about to say, by savage characteristics, but more properly by characteristics taught through intercourse with the worst specimens of the white race, indicate what such a man might have become under happier auspices. Yet, in these cases, it is easy to see, that to the accident of circumstances they, too, owe their fame. Another consideration presents itself in illustration of the same truth. Were genius irrepressible, and certain to break forth through all obstacles, like the butterfly from the chrysalis, it would make its appearance at a definite time. Yet nothing is more certain, than, that while greatness in some is developed at a very early age, in others it is unknown and unsuspected till middle life or even old age has set in. While Alexander the Great, William Pitt, and Lord Byron attained to the pinnacle of fame when little over twenty, and the unfortunate Chatterton perished at a still earlier period, Oliver Cromwell, to whom, perhaps above all, England owes her present liberties, was considerably over forty ere he emerged from obscurity; and our own George Washington was about the same age ere he was summoned by the call of his country to come out on the stage of history. The discoverer of America was almost sixty ere the fruition of his genius made him known to men; and turning to sacred history, we find that the great lawgiver, Moses, was eighty years of age, ere the inspiration of his soul, evoked in his case by an audible voice of God, made him known to the end of time. In our own immediate age, there are perhaps as striking instances of this truth as at any other period. Though the weakness of human prejudices, unable to judge clearly of events so near our time, and stimulated by the rancor excited during our late civil contest and the political events preceding it, renders us unwilling to enlarge on such instances in our own time and country, we must briefly mention two of them. We believe that the name of Abraham Lincoln will go down to the admiration of future ages, and that the military exploits of Robert Lee will signalize his name, till perhaps war itself shall cease to be, and these are excellent cases in point. But still more striking is the instance of the great German strategist, Von Moltke, who, in times of peace, obscurely lived out nearly the entire span of existence alloted by the inspired writer to man. Since the development of genius thus occurs at every stage of human existence, the conclusion is irresistible, that in many instances no opportunity for development is afforded, at least in this stage of existence.

It is possible that in another sphere we may witness the fruition of powers and capacities, undreamed of by the most gifted of the human race in this. In such an existence there may be abundant opportunity and ample scope for that development of our faculties which is denied us here; and it may be the purpose of that Supreme Power, "who makes straight the obliquities of man," to adjust in perfect equity the balance of opportunity for development so unequally poised in this life. While circumstances, as a rule, have brought hidden genius to light, lifting it from obscurity to eminence, it must be admitted that there are exceptional instances of towering and transcendant genius, which become manifest from the earliest period of life, which seem indeed intuitive from birth, and would appear capable of overcoming almost

the greatest difficulties in life's pathway. Yet, even in these cases, accident has more or less to do with their career. The astonishing genius of Newton would probably enable him to attain eminence in any civilized community under the most serious disadvantages, yet a casual incident has identified his name with the great law of the universe forever. Had Newton, too, lived in an age when the pursuit of knowledge would be deemed a sorcery, and the discoverer of a new truth was likely to be rewarded with torture and death, his genius, if not dormant, would certainly be unknown. Two reflections naturally occur here. First, the imperative duty of all governments to throw open freely to their citizens the best possible means of acquiring knowledge and skill, and the best possible opportunities for utilizing and developing such advantages. To this end they should provide such facilities that no genius need be hidden for lack of culture, and no grand qualities remain undeveloped through lack of opportunity. The thorough education of the rising generation in knowledge adapted to each individual, whether artistic, literary, scientific, or—last not least—the practice of skilled labor in any required branch, would be a protective tariff to which none could object, and would be a fostering of native industry that would probably render any other protection superfluous. Our second reflection is the significant fact that those great men whose resplendent genius, like the sun enlightening the world, seems able to burst through the thickest clouds of adversity and discouragement, have been in all ages the grand teachers of the human race. They seem as if sent, like the prophets of old, on a divine mission, which must be fulfilled despite all obstacles. Exceptional times may bring out the warrior to preserve or destroy the liberties of his fellows, or may illustrate the subtle policy of the politician and statesman; but the teachers of man are ever needed, their opportunities are ever present. Yet even such men as Confucius, Solon, Plato, and Newton must live in a period where the light of knowledge burns, however feebly. In times of barbaric ignorance their genius would find no place; it would either be the handmaid of fraud or be entirely repressed; in any event it would be hidden under a bushel. The flight of the goddess Astrea to the skies, in consequence of the wickedness of man, was no idle fable, but a grand symbolic truth; and should she again abandon her earthly residence for her heavenly seat, rapine and violence would once more exclusively reign as in that fabled period of old. While the annals of history exhibit to us the names of those few genius-laden barks that, surmounting the breakers of life, have entered the haven of immortality, the shores of time present to us the remains of wrecks equally precious, but who, less fortunate, have succumbed to the storm. The name of the first ocean navigator is wrapped in impenetrable obscurity; his daring all will admit with the poet:

"Illi robur et acs triplex Circa pectus erat qui fragilem truci, Commisit pelago ratem."*

The inventor of our wondrous numerical system, one of the greatest inventions ever made, has equally passed away, not leaving the faintest trace. Who can tell the Centaur's name who first broke the steed to the service of man, or the names of those who first subjugated the other animals? The names of those who invented picture-writing, and the successive improvements, culminating in alphabetic symbols, are all equally unknown. The pioneers of astronomy, geometry and trigonometry, who have left such wondrous monuments of their skill, in Egypt and elsewhere, in the prehistoric period, are all alike obscure. So are the architects of the pyramids, the temples, the labyrinths and the cities, structures whose colossal grandeur has been and ever will be unrivalled. magnificent cities, once seats of great extinct empires, that now lie buried amid the pathless forests of this continent, or stand in desolate grandeur on the upheaved plateau of Central Asia, mock the traveller who seeks to know something of their founders, legislators, warriors, statesmen, or in short any

[#] Hor. Od., b. i.

thing about them. While the destroyer of Diana's temple has secured for himself an imperishable name, its great builder's name is wrapped in impenetrable darkness. The name of Vasco de Gama is immortalized by an exploit that the Phœnicians achieved more than twenty centuries previously. Yet, though the fact of this wondrous voyage from the Red Sea to the Mediterranean is now well established, the name of him who performed the astonishing feat without sextant or compass is unknown.*

While Canova and Thorwaldsen are immortalized in their works, the authors of those more wonderful masterpieces of antiquity, the admiration of mankind, have been unable to escape the common lot of obscurity, where we can only say, "There lived a man." Even the doubtful name of the greatest of poets is almost entirely unknown, and he is known to posterity by the nickname of "blindman." When we review the history of the past, note the very few names that out of the innumerable multitude survive the wreck of time, and reflect that, in this scanty band, the weak, the worthless, and the vile often occupy places to the exclusion of the great, the noble, and the good, we feel irresistibly the emptiness and vanity of human fame. We do not even know the truth about the names that are handed down. History, as well as legend, abounds in fables. Doubtless, names deserving execration have been held up for the applause of future ages, and noble spirits have been pursued by obloquy beyond the grave. Modern historical research is every day making corrections of this kind. Well did the ancients typify Fame, as an earthborn monster, sister of the giants, that nearly succeeded in storming Olympus and hurling Jupiter and the other deities from their heavenly thrones. This monster they describe as covered with plumage, and under each feather is a sleepless eye, a noisy tongue, an open mouth and an attentive ear, the poet ending the description by representing her as totally indifferent to truth:

[&]quot;Jam ficti pravique tenex quam nuntia veri."

^{*} Herod. iv, 42, Rennell.

[†] Virgi, b. iv.

Even those names that have so far survived the lapse of ages are, if we may be pardoned the expression, only relatively immortal. The current of time still runs, and like bubbles on its surface, names that still exist will now and then go under, and new names will appear instead. How few even of the present historic names will survive the action of time a hundred centuries from now! And it is melancholy to reflect, that of this list many of the wisest and best will perish from the earth—many of the worst and basest will endure. The pursuit of fame is like a boy's unavailing pursuit of a butterfly, which, successfully eluding the exhausted pursuer, may light into the grasp of another. Under the most favorable natural circumstances, spirits the most gifted and abilities the most shining may fail to attain the coveted prize that accident may secure to baser minds.

The ancients compared fame to an *ignis fatuus*, which, the more it is pursued, the more it flits away. From this man may learn one valuable lesson, namely, the uselessness and folly of attempting to make a name for future ages by methods incompatible with true worth and manliness. Even then these qualities should be cultivated for their own sakes, not for their effect upon the future. Otherwise, they are not natural: the actor plays his part with a false mask, and he is almost certain to fail in attaining fame, which is uncertain of attainment at best, and often untruthful in its expression when attained. We should imitate the example of the great Roman Cato, who according to Sallust, desired to be worthy rather than appear so. "Therefore," continues the writer, "the more he shunned glory, it pursued him all the more."

We shall conclude this article by attempting to describe the most prominent elements of a truly great and noble character; how their practice may be stimulated, and what lessons we may learn from their contemplation. Great mental abilities are a very important, though not an absolutely essential element of greatness, and these qualities alone have immortalized many names. Vivid feeling and imagination, or rather the emotional sensations of our nature creating such a capacity, is another important element of greatness. History contains instances where intellects, previously dull, have been quickened by intense emotion into an activity and brightness rivalling the finest innate ability; and it is a singular fact that the exaltation of spirit thus produced is as permanent as though born with the individual. We have already given an illustration of this phenomenon in the case of the elder Brutus. The following case is also a good illustration: A distinguished American judge, noted for the quickness of his perceptive powers, and the brilliancy of his mental, in answer to a lady, who remarked that his abilities in childhood must have been very precocious, amazed the company by declaring that in childhood he had been unusually slow of comprehension; that he was the dullest boy in school, and was, in fact, a blockhead of uncommon stupidity. His mother was a pious widow lady, tenderly devoted to her only son, and all the more because of the great obtuseness of his intellect. was always at the foot of his class, and though his mother strove hard to aid him, his teacher was constantly complaining. Just previous to a certain examination, his devoted mother spent many a weary and laborious hour in teaching him a very simple lesson, purposely selected by his teacher in view of his known dullness. After many trials and great patience, his mother at length succeeded in making him recite it without a mistake before retiring for the night. Next morning, before going to school, his mother tried him again, but to her dismay he could not remember a word! Painfully vielding to the conviction which she had long resisted, that her son, despite her great care and disinterested exertions, was a hopeless fool, and, being overcome by her feelings, she laid down the book, buried her face in her hands, and burst into tears. Notwithstanding his dullness, the boy was a most affectionate son, and he was intensely excited at the spectacle of his mother's passionate grief. In a moment every word of the lesson flashed before him like characters of living light. "I know it now! I know it now, mother!" he exclaimed, falling down before her; and, to her intense astonishment, he

repeated the lesson word for word. The mother was motionless for a few moments; she then sank on her knees and clasped her boy to her breast, uttering a fervent prayer of thankfulness. Her tears still flowed abundantly; but they were now tears of joy. From that hour his dullness disappeared; learning was an ease and a pleasure; but the reaction from grief to joy proved too much for the poor mother, and a few months later saw her in her grave. We give this incident somewhat in full, because it probably illustrates the part emotion has played in many an historical crisis.

We will briefly mention a similar incident perhaps better known. The celebrated Cardinal Mezzofanti, the greatest linguist ever known, who understood 114 languages, is said to have derived his phenomenal facility of acquiring such knowledge from intense emotion caused by a desire to confess a foreign culprit, whose language none knew, and who had been sentenced to die on the following day. Sitting up all night, the good father—then a poor curate—applied himself to the study of his language with such zeal and success, that next morning he had the satisfaction of confessing the wretched man, and of giving him absolution, thus saving his soul, as he believed, from eternal misery. He had previously been regarded as a rather good linguist; thenceforward he became a phenomenal one, amply vindicating his title to the names of the Briareus of languages and the walking polyglot.*

Physical strength and personal courage, though desirable in themselves, are qualities common to man and many other animals, and of themselves constitute no title to worth or greatness. Combined with nobler qualities, they may give completeness to a great and worthy man; but yet are very subordinate in importance to the mental and moral characteristics. We may incidentally remark, that the emotional quality affects the physical as it does the mental system, with the important difference that its effect on the first is usu-

^{*} Biog. Card. Mezzofanti.

ally transient, on the latter permanent and decisive. far the grandest element in the formation of a great character is the moral. This quality is but poorly defined in our language; but whether it be termed principle, moral courage, conscience or devotion to duty, it has ever been-when hightoned—the mainspring to the noblest and most heroic achievements of the human race. The caprice of fame may hand down to us such names as that of the athlete, Milo, or celebrated wrestlers and gladiators; but such careers have no influence on posterity, and merely excite a vague wonder. Even intellectual abilities may be perverted to the worst purposes, and though they excite admiration of the mental capacity that renders their deeds or works possible, the deeds themselves may fill us with horror, or the works poison the heart. otherwise is it with the exercise of the moral faculties, which, even when mistaken in their impulses, always evince a grandeur of soul, and command an admiration that no other qualities can secure. Neither does this principle owe anything to emotion. It soars far beyond this quality of our being, characterized as it is by a calm serenity and an inflexible resolution. Moral principle or devotion to duty has two prominent manifestations, if indeed they are not, as is most likely, two distinct and separate principles. The first is an unyielding firmness in what is deemed right, and to this quality the ancient poet so beautifully alludes:

This grand principle has sent many a martyr to the stake, especially in the causes of religion, liberty and human rights; and even in a mistaken cause it commands instinctive and involuntary admiration. Yet its very severity and rigid in-

^{*} Hor. Od. iii, 3.

flexibility have a cold and repelling effect on most minds, unless it be accompanied with softer and more sympathetic qualities. Unyielding as adamant, it often does not make proper allowances for the weakness of others. Much as we may admire its grandeur in the abstract, it has much the same effect on us as an inaccessible glacier, or a snow-capped, avalanche-laden mountain, which we admire at a distance, but in whose vicinity we will not permanently dwell. Few men will ever dare to emulate the terrible examples of stern integrity exhibited by Brutus and Manlius in their judicial careers, and as few sympathize with the anguish they silently but unquestionably endured. Though this characteristic is a necessary and grand element of a truly great and heroic spirit, we see that it is not of itself sufficient to sway and dominate the minds of men. It is rather fixed in purpose and passive in nature than actively heroic, and though sublime as a Himalayan peak, it is in itself as immovable and inert. But there is a second characteristic of the moral faculty, a more active principle which the ancients justly regarded as by far the grandest and finest quality in the composition of heroism and true greatness, namely self-devotion. This principle is the incarnation of the most godlike quality of our nature, a true embodiment of the golden rule, which the great teacher of man himself declared to be the substance of the laws and requirements of God. While inflexible in its own case, it throws out its sympathies to other spirits, regarding each as its peer, and is always ready to sacrifice self to promote the welfare of others. Whose heart does not thrill with emotion at the sublime spectacle of the young girl from Indiana, leaving home and friends to be an angel of mercy and die among strangers in the plague-smitten city of Memphis? Who can measure the ever widening influence of such an example as hers, when perhaps the heroine herself has been long forgotten? Ancient history, both sacred and profane are alike in regarding this grand principle as the culminating glory of human character. The grand example of the Founder of Christianity is a signal illustration of this truth; but barely alluding to this, we shall confine ourselves to mere human examples.

Perhaps the grandest illustration of this self-sacrificing quality on record is afforded by the great lawgiver of Israel, who requested from the Deity to be blotted from the book of life if otherwise he could not save his people.* The great apostle of the Gentiles, in declaring himself willing to be accursed from God,† if so he might save his people, manifested a similar spirit of self-devotion. No greater human names than those of these great men are recorded in the Bible. No greater spirit of self-devotion than theirs is recorded anywhere.

Yet the exhibition of this great quality is by no means confined to sacred history. Codrus, Leonidas, and the other worthies mentioned in the earlier part of this article illustrated their self-devotion in the most signal manner, and no names in Grecian or Roman history were honored as theirs.

The Athenians abolished monarchy on the death of Codrus,‡ declaring by law that no one could ever be sufficiently worthy to succeed him. This showed their appreciation of his sublime self-devotion to his country. The beautiful Greek legend of the faithful wife who submitted to die to save her sick husband's life, when the oracle proclaimed he could only be saved by another dying in his stead, shows a like appreciation.

Nor did the Romans hold the quality in less esteem, as a grand legend in Roman history abandantly proves.§ A wide gulf suddenly and mysteriously opened in the forum. In vain they strove to fill it up; and after throwing into the yawning abyss incredible amounts of earth and rubbish, it remained as before, unfathomable and unfilled. In dismay they sent to consult the oracle of the gods. The answer returned was that the gulf could never be closed till it held in its depths the most precious thing Rome contained, and declined all further explanation. While all others stood aghast, Quintus Curtius, a noble Roman, clad in full armor, mounted a fiery steed, and exclaiming that nothing could be more precious than valor and self-

^{*} Ex. xxxil, 32. † Rom. ix, 3. ‡ Grote i, 18, from Konon. Vell. Pat. Prerekydes et alii. § Liv. vii, 6, and clsewhere.

devotion, rode boldly into the chasm, which immediately closed over him. This typifies the sublime truth, that here or hereafter self-devotion can save a people or a race when all else would fail; and history proves that from the germ of such examples great deeds spring, as the harvest from the seed corn. Self-devotion of the highest kind is always combined with moral firmness, and the devotion to duty that springs from these qualities is the highest attainable motive that can actuate man, as the ancients well knew. It was not for nothing that Greece and Rome became the most brilliant nations the world had till then seen.

On looking back at the past we find that the nations who most thoroughly understood and practised the principles we have feebly striven to indicate were invariably the greatest and most heroic. Nor are modern times lacking in instances of self-devotion, though the ancients had a juster appreciation of the quality than we. One signal and recent instance in this country has already been given. At the battle of Waterloo,* a French cuirassier officer, observing that a gun loaded with grape was about to be discharged at his comrades, suddenly wheeled his horse, galloped up to the cannon's mouth, and, sword in hand, kept the gunners at bay. Of course he became at once the target for thousands of bullets, and soon dropped dead from his horse, but not before saving the lives of many of his countrymen. Such instances of selfdevotion were not uncommon in the army of the first Napoleon. The self-devotion of Arnold Winkelried, at a critical time, had a telling and probably a decisive effect on the cause of Swiss liberty, and in one brief hour conferred on the hero an immortality of the noblest kind. Some forty or fifty years ago a vessel was wrecked near the Cape of Good Hope during a terrific storm. The vessel was aground some distance from the shore, with the breakers dashing furiously over it on the helpless crew. No boat could live in such a sea, and all were given up for lost. Meanwhile a neighboring planter rode

^{*} Maxwell and others. .

down on a splendid horse, and after looking a few moments, dismounted, blew some brandy into the nostrils of his spirited steed, and despite all remonstrance swam to the wreck. He returned safely with two sailors, one clinging to each stirrup. Again the noble animal was urged into the seething caldron, and again with two more returned in safety. This operation was performed no less than seven times, and fourteen lives were the fruit of the heroic and daring achievement. An eighth attempt was made, but horse and man were now becoming exhausted. As they neared the wreck for the last time, steed and rider were submerged beneath the roaring billows; the horse with some difficulty managed to swim back, but the noble-hearted owner disappeared forever.

The sense of fair play is a modified form of the moral principle, differing from moral firmness or a sense of justice only in degree. Chivalry and unswerving faithfulness in duty are also modified forms of moral firmness and self-devotion combined. Chivalry may be defined as fair play where one's self is concerned. It was finely illustrated by the French officer in the Spanish Peninsular war, who, when about to cut down a gallant English colonel, in the front rank, perceived that his right arm was gone; he rapidly changed the downward motion of his sword into a salute and passed on.* An English sailor, one of a party engaged in storming a Spanish fort in Central America, about ninety years ago, on scaling the wall, having two cutlasses in his hands, met a Spanish officer who was unarmed; he immediately presented him with one of his own weapons. A magnificent illustration of devotion to duty was presented during our late war. soldier belonging to the picked corps of sharpshooters, during one of the operations in Tennessee, was stationed in a rifle pit in advance. During an advance of the enemy he was shot through the head, dving in a few seconds. These few moments he employed in destroying the adjustments of the

^{*} Napier, Pen. War.

costly telescopic rifle, so as to render them useless. Fighting for his native land, this soldier was strictly and literally "faithful unto death."

And yet even such deeds as these can not secure an immortality unless accident has previously erected a stage from which it can be widely seen. Nor do they need such a counterfeit endorsement. Like the ever widening circle, produced by a stone thrown on a placid lake, it lives in the ever widening influence inspired by, and that in turn inspires, noble souls to the performance of similar deeds. Thus, it may be said, that the influence of good deeds is never lost, though the doer may be unknown or forgotten. Perhaps, in another sphere of existence, it may be the delightful privilege of the great, the noble and the good to trace through the ever lengthening ages the never-ending influence of a noble deed, perchance forgotten by them in this life. In any event, when we consider how vain, empty and partial human fame is, partaking as it does of human infirmity; and when we reflect how utterly useless it is to us personally, in a future existence, we see the folly and futility of the mad efforts of man to attain it. Let us rather seek to gain the approbation of that Being who holds the destinies of the universe in his hands, and who swavs the record of the coming ages, than the feeble applause of our fellow worms of the future. This can be done by the constant and careful cultivation of those high qualities we have mentioned; qualities which, instinctively commanding the respect and admiration of men, must needs meet the approval of Him who implanted that instinct. It is a cheering fact in our life's career to remember that the higher such quality is, the more susceptible it is of cultivation. While physical qualities are improved by cultivation. the qualities of mind and emotion are susceptible of far higher improvement. Even these are surpassed by the moral qualities. in the capacity of high and rapid development, producing in many instances a startling revolution of character, often termed conversion or reformation. The approbation of our own conscience is, or ought to be, a richer reward than any other approbation, whether of the present or future.

Whatever be our lot in life, the development of nobler faculties will prepare us in the most fitting manner for whatever may befall us, and will even make our prospects of future fame higher than they possibly can be by any other method.

ART. IV .- 1. Das Leben Jesu. Tubingen. 1835.

2. Der alte und der neue Glaube. Bonn. 1873.

About one o'clock on the afternoon of the ninth day of February, 1874, flashed along the Atlantic cable the brief sentence: "David F. Strauss, the eminent German theologian, With brevity thus curt was announced the demission of one of the great theological and ontological dreamers of the nineteenth century, whose name has been familiar to the public for almost forty years as that of an intellectual Titan, and whose Hegelist dreams, as illustrated in his first book, the Leben Jesu, finally, and by natural progress coincident with the progress of the particular phase of speculative activity he represented, culminated in the barren, scientific pantheism illustrated in his last and most unique—Der alte und der neue Glaube. An interval of thirty-eight years intervened between the application of the ideal pantheism of Hegel to New Testament exegesis, of which the first is the logical exponent, and the ultimate rejection of religion, except as an element of human thought-an element confessedly necessary, but nevertheless illusive-of which the last is the explicit and unhesitating avowal. During that interval most of the great material facts and the coincident hypotheses of what may be termed the modern scientific culture have been developed and grouped about a central theory popularly known as the theory of Evolution. On the one hand, Darwin has woven the structural and biological aspects of this theory into a coherent system in his "Origin of Species" and his " Descent of Man;" while, on the other hand, John Stuart Mill, Dr. Bain, Herbert Spencer, and Professor Huxley, have concerned themselves in moulding its psychical and intellectual aspects into a parallel system of cerebral psychology, in which the notion of spirit, as being, is replaced by a mysterious operation of molecular forces, and thinking is relegated to the domain of molecular physics: a kind of dreamland of the physical sciences, pregnant with vague speculations, and thus answering passably well the purposes of a material substratum, to which to refer whatsoever in human consciousness appears inexplicable by means of the ordinary uniformities of scientific order.

The second quarter of the present century, during which the first work of the German dreamer appeared, was, it will be remembered, marked by a peculiar phase of speculative thought, in which metaphysics of the extreme type and physical investigations were curiously blended, and which eventuated in the strange theories of mesmerism and electro biology, on the one hand, and in the curious and trance-like reveries of spiritualism, on the other. In Germany it especially represented a period of transition from the misty metaphysical doctrines of Hegel and his disciples to the barren but speculative materialism of Helmholz, Mayer, and Ecker, to say nothing of a hundred thinkers of lesser note, and answering the purpose of retail dealers in materialist theories. If was an era during which, if the metaphor is admissible, the protest of German thought against the vapory dreams of Hegel was deeply felt in literature, but had not yet become conscious of itself in open and positive dissent; an age pregnant with the new protestantism that has since become the faith of philosophical thinkers, but not distinctly aware of its own tendencies, and instinctively shrinking from lucid recognition of its own conclusions. Had the spirit of Hegel taken hold less deep of the minds of his countrymen, it would not have been left to France, as represented by Saint Simon, Fourier and Comte, to elaborate the socialistic side of this protest; nor to England, led by John Stuart Mill and Bain, to coordinate the discoveries of Gall and Spurzheim in brain anatomy into a coherent structure of psychology. As it was, tormented with the nightmare of Hegelism, Germany supplied the dynamical element of the new culture, while to England and France was committed the elaboration of its special forms. As one who walks in sleep, she led the way, herself unconscious of the hegemony, and England and France consciously appropriated the results, while she was rubbing her eyes and wondering what it all meant.

As illustrative of this mood of the German mind in the special department of theology, the first work of Strauss is of peculiar interest to the general student. With quicker apprehension of the general tendency of his age, though with less profound analysis of the special facts, Comte in his Etre Suprème de la Humanité spans the whole interval at a spring, and plants himself unequivocally on the exact ground Strauss has occupied in his last book, thus anticipating the main propositions of the Tubingen professor by half a century, and grasping with one strong effort the conclusions to which the latter felt his way step by step. All great works, whether in poetry or in philosophy, are polarizations of the popular consciousness with which their respective authors are in sympathy: and thus Comte and Strauss, the one with his God of ideal humanity, the other with his universum in place of Deity, stand as polarizers of the moral and philosophical tendencies of the races they respectively represent. In the instance of the one is interpreted the impetuous leap of the Celtic mind; in that of the other, the slow and semi-unconscious groping of the Teutonic, less given to revolution, because secreting less

lightning, but none the less mastered by the forces of the age by which it is environed. How closely, even in point of expression (to say nothing of the identity of the subject matter), Strauss, in the conclusions of his sixty-fourth year, approximates to the fundamental principle of the founder of the Positive Philosophy—that man's God is the ideal man—is nowhere better illustrated than by the following sentence from page 137 of his last work: Was der Mensch sein mochte. uber nicht sei, dazu mache er seinen Gott (What man feels that he might be, but is not, he makes his God). That is to say, the idea of God is but the exponent of man's dream of the absolute man-a phantasm he conjures up in idealizing himself, and having no more than a subjective reality. It is seen, therefore, that, after nearly forty years of cogitation, the great neologist has arrived at M. Comte's primary proposition, so far as concerns the idea of God as a necessary element of human life. Again, his fundamental proposition of the absolute identity of matter and mind (Die absolute Identität des Realen und des Idealen), affirmed at page 152, was long since anticipated by M. Phillips, whose work on the physiological relations of spirit and matter was published in 1835, at Paris, as a part of Ballière's Library of the Imperial Academy of Medicine, but has never been translated. Not only anticipated, but anticipated in terms the elegant precision of which is in marked contrast with the cloudy uncertainty of the paraphrase. "Un principe homogene," says M. Phillips, with beautiful perspicuity, "occupe seul l'univers entier; sa manifestation subjective s'appelle l'esprit ou générateur de la pensée; sa manifestation objective, c'est la matière;" whereas Herr Strauss, by adopting the vague and metaphysical phraseology of Schelling, has left it to be ascertained from other passages whether he means to use the terms in their earlier speculative sense, or as synonymous with the matter and mind of Herbert Spencer and Professor Huxley.*

^{*}This theorem, that the universe is occupied by one homogeneous principle, the subjective manifestation of which is spirit or consciousness, and the objective manifestation of which is matter, belongs to the domain

Our purpose in calling attention to these co-incidences of thought is not to impugn the originality of the German thinker, for the same rule, and, indeed, the same volume, would equally impugn the originality of Spencer's whole system and of Huxley's theory that thinking is a phenomenon of molecular physics; but, on the other hand, to indicate the intellectual sterility that necessarily accompanies this special phase of modern speculation, limited, as it is, to the task of accounting for all the phenomena of nature and of human life by reference to the observed uniformities of matter, and thus compelled to create a coherent universe out of molecules of the constitution of which it apprehends nothing, except that, as M. Phillips lucidly expresses it, matter is supposedly divisible à l'infini. When, therefore, at page 121 of the Bonn edition of his last work, the aged pupil of Hegel concludes that, the identity of matter and mind granted, the idea of a personal extra-universal God is not conceivable (" Es ist un einen persönlichen ausserweltlichen Gott dabei nicht zu denken"), he merely lays down a proposition from which there is no escape by byway or alley of logic. If the premises are sound, then his final deduction that mind is a physiological function, destiny a fancy, and reabsorption into the universe the end of all our day-dreams of immortality, is so pitilessly apparent that the only wonder is how he succeeded in shutting his eyes to the

of molecular physics, but is exactly parallel with the metaphysical proposition, as Strauss and Schelling put it. Thus materialism and idealism are fundamentally the same, in that both affirm this identity of mind and matter; only the materialist regards matter as potential and self-moving. From his point of view, matter becomes conscious of itself in mind or thinking. On the other hand, to the idealist mind becomes conscious of itself as conditioned in the phenomenal, which, however, is simply its own shadow. As a very acute critic has pointed out, though seemingly antagonistic the antagonism between the two is only an antagonism of terms. That, while conscious of himself as material organism (matter), man is conscious of himself as more than matter materialism is unable to explain. Nor can molecular physics account for the fact. Spencer virtually confesses this in his essay (see "First Principles") on the consciousness of the Unknowable, and Huxley ("Lay Sermons") in his dissertation on Des Cartes.

result of his own system from the age of twenty-seven until, like a leaf, he turned sere and fell. In the whole history of materialist speculation, from the Ionic philosophers, with their hypothetical hyle, to Huxley and Spencer, with their matter divisible à l'infini, not a single instance occurs in which these premises have not led to the same identical conclusions, they are so like Siberian wastes of steppe in their barrenness; and had he been successful in spiritualizing them, his insight must have been supra-mortal, or his acumen an infinitesimal quantity. As it is, this Swabian Ikaros, whose strong wings bore him sunward so long in spite of the five hundred pounds of matter tied to his heels, as Heyne has it of Rubens, only proves himself human in that he drops to earth at last, and, with sad presage, accepts at sixty-four the absorption into the universe against which he has for so many years held out. Life, says he at the very last, is a dream of nothingness about something-the sad but inevitable religion incident to all phases of materialism. Nor is the empty and spiritless fatalism of this final verdict rescued from sterility by the transcendental proclamation that "this world of absolute ideas, or the universum, and the world of relative ideas, in which the word is susceptible of a plural, must be carefully distinguished, in that the latter, fast tied to the partial and evanescent, has its limit in space as well as its beginning and end in time; while, on the other hand, the universum is without limit in space, and endures and maintains its unity through all time." It is pleasant, of course, to be advised of this law of the new religion, and it would be pleasanter still, no doubt, were the information expressed in comprehensible terms, and not in a sentence so tortuous and involved that it appears to begin by accident and end by a special dispensation of Providence.

This vague and unsatisfactory proposition furnishes, how ever, a definite clue to the intellectual bias, partly natural and partly the product of environing critical and speculative elements, that determined the literary activity of Strauss, and, while perpetually protesting against the blank and barren skepticism of those who regard the soul as the

exponent of physiological conditions, finally forced him to accept that position, though with the reluctance and hesitancy of a man whose instincts and culture are at war with the logical faculty. A glance at the facts of his biography explains this conflict. Born at Ludwigsburg, June 27, 1808, he was first sent to the academy in Blaubeuren at the age of thirteen, and remained four years. At seventeen (1825) he entered the university of Tubingen, and was graduated in 1830. Two years later, having passed six months in Berlin, in the study of the Hegelian philosophy, he returned to Tubingen, where as Repetent he delivered a series of lectures on Hegel. In 1835, three years after his return from Berlin, his Leben Jesu was published at Tubingen, having been first submitted by his publisher to the perusal of the celebrated Neander, whose criticism was that, though not orthodox, it was written in a scientific spirit, and would make a flurry in theological circles. The result more than justified Neander's remark, for during the two years that intervened between the publication of the book, and the revision of it with additional polemic, "Das Leben Jesu Kritisch Bearbeitet," called out by the acrimony of his critics, several editions were exhausted. This polemic failing to allay the irritation, he issued a kind of philosophical apology for the Leben Jesu, entitled "A Dissertation on the Ephemeral and the Permanent," in which, while reaffirming his original positions, he contended that the ideal underlying the myth was the valuable element of the New Testament narrative, while, as history, it contained nothing specially essential to spiritual nutrition. These papers were afterwards published under the title of "Two Peaceful Letters." M. Littré, long so familiar as a leading positivist and now better known as an eminent lexicographer, translated them for the Paris market, where, according to the "Nouvelle Biographie Genérale," they were published in 1839. From this date on, saving frequent contributions to the reviews, his writings were mostly biographical and astheticfor his last volume, with its central idea of an universum. appears to be a loosely edited aggregation of occasional essays, some of which, like the essay on Goethe, have no special relation to the general theme—others, among which may be reckoned the "Zweck der Welt," being extremely cursory dissertations on the teleological aspects of modern thought. In 1848 he entered the arena of politics under the strong revolutionary tendency that just then brooded over Europe, and, having been defeated as a candidate of the German National Assembly, was returned by his native town as a member of the diet of Wurtemburg. But the popular impulse was not equal to the task of converting the dreamy but frigid critic into an enthusiastic exponent of the socialist ravings of the Young Germany party, and so unsatisfactory was his course that his supporters called for his resignation, and he lost the ephemeral popularity occasioned by his "Romance of the Throne of the Cæsars" ("Der Romantiker auf dem Throne der Cæsaren oder Julian der Abtrunnige," Mannheim, 1847), in which Frederick William IV. appears as Julian the Apostate. His wife was an actress in early life -one Agnes Schevest, of Vienna, five years his junior, who in later years turned author and produced a very clever volume of reminiscences under the pretty title of " Aus dem Leben einer Kunstlein." Ample verge here for dream-life, whether philosophic or poetic: small room, nevertheless, for the humanizing action and tonic effort which are oxygen to the moral faculties!

The profound critic of human life will not expect to find vital faith in a life so barren of moral crises as that of the founder of neology, for the world has learned to know that there is something ill-humanizing in exclusively intellectual activity. Faith is the moral aura engendered by active struggle after the good. Tossed hither and thither of life, sore buffeted with sorrow and misfortune, or stricken and wounded of men, no dreamer's dream fills the worker's need, howsoever sufficing that dream to those who shut themselves away from life, in libraries of antique volumes or in desks, surrounded by sympathizing pupils. For faith is not merely insight, but impulse and motion towards an end—that end the good and the beautiful.

Of the buffetings that make men know their deepest needs, Strauss, in quaint and quiet Tubingen, knew nothing. From his books to his desk for a metaphysical disquisition on Hegel, from his desks to his books again-this was the life from whence grew the Leben Jesu, and only to this, a kind of dreamliving, is the Leben Jesu adopted. In the nature of the case, a man's work is for those of his own kind; and as in most lives the dynamic or active element—that which makes heroes -preponderates over the static, so most men learn, sooner or later, to distrust mere intellectual analysis and to ignore its conclusions, as unreal, and as having no vital relation to the problems that so sorely vex them. To the poor tempted soul, pulled this way by interest or want, that way by instinctive loyalty to truth and honesty, what matters it to be told that moral rectifude is the exponent of a physiological equilibrium. between the cerebro-spinal nerve-system and the great sympathetic nerve-system! "La conséquence physiologique," says M. Phillips,* and so implies Herr Strauss in his "Old and New Faith," "des rapports anatomiques établisentre les deux grands appareils vitaux, le système nerveux cérébro-spinal et le système nerveux grand-sympathique." Extremely comforting to know this, it may be to those who, spider-like in their works, spin gossamer webs of philosophic speculation, but those whose lives are troubled care little for equilibration of nerve-centres; and besides, the proposition has been negatived by very recent physiological discoveries, and therefore need not be formally refuted.

There is, then, this great fact of the absence of active struggic with the hard problems that trouble humanity, to account for the dreamy, unsympathetic attitude Stranss assumed at twenty-seven. Yet it is possible to over-estimate the hegemony of Hegelism in forming his mind and determining the special direction of his work. Of the same province with Schelling, the peculiar bias and tint of his earlier writings are traceable to Schelling's "Philosophy of Revelation." The bias

⁹ Electro-Dynamise Vital. Paris, 1855.

he outgrew, but the tint is as perceptible in his last work as it was in his first, and constitutes the one permanent element of his intellectual activity. It is this that rescues his final volume from abject spiritual servility to matter, though its logical and intellectual submission is no less complete than that of Dr. Bain* or Professor Huxley;† and it is witness to the striking resemblance in intellectual and spiritual traits between these two sturdy Swabians, that the imaginative aura the younger caught from the elder should have persisted so many years after its logical basis was removed. Both minds were of artistic cast, with a predominant and intense love of the beautiful; and to what logical conclusions soever the man of true artistic spirit may come, his higher nature is sure to overbear and contradict them, not only in literature, but in the everyday concerns of life. Thus, in the logical aspects of his nature, Strauss rejected religion and the supernatural as unrealities, while his artistic cravings forced him qualifiedly to accept them as the sources of that ideal of human life that pricks humanity to onward progress. This compromise furnishes the clue to the perpetual contradiction that alike pervades the Leben Jesu and the "Old and New Faith;" to the struggle for mastery between the rational intellect and the higher spiritual cognition, now the one thrown, now the other, in the life-long wrestle of the Jacob of reason with the angel that must continually intrude itself upon his attempts to fashion a coherent universe.

As the sequel of this trait, in his first wandersinn he sought to establish a coherent philosophy of the life of Jesus and to effect a reconciliation between the critical doctrines of Ewald and Von Baur, which seemed to him destructive to the historical authenticity of the gospels, and the higher spiritual facts unfolded in the text, just as Schelling had endeavored to bring Rationalism and inspiration into concord in his "Philosophy of Revelation;" and like its predecessor

Mind and Body. Theories of their Relation. London, 1873.

[†] Lay Sermons. London, 1870.

in a kindred field, that of the "Philosophie der Offenbarung," Strauss's reconciliation is little else than a confession that the hard conditions of the problem must for the present defy intellectual analysis; mainly, perhaps, because of the floating and unsatisfactory condition of psychology, so obscured on the one hand by volumes of metaphysical vaporing, and so burdened on the other with masses of unacrified material speculation, that until some new Kant arises to verify and put order into disorder, no co-ordinate and well-grounded results can be expected. In capacity for psychological analysis the adventurous young theologian was painfully limited both by nature and by culture; by culture, because the vast metaphysical dreams of Schelling and Hegel, and the methods of thought they engendered, were wholly alien to the habit of thorough and careful observation so necessary to the scientific study of psychology; by nature, because these methods of thought, empty and vague, unreal and out of all relation to life, transcendental and generalizing as a sermon by Theodore Parker, had become hereditary to the German mind and controlling elements in its literature; and thus he set out with an inherited and carefully fostered ineptitude for the task to which he had devoted himself. But it will be better to recur to this topic further on, and to give here a hasty map of the great critical movement that eventuated in the Leben Jesu, deferring criticism for a few paragraphs.

Most readers are aware that the Mosaic origin of the Book of Genesis has been denied only within the last century and a half. As a substitute for the generally accepted tradition, this denial starts out with the proposition that Genesis is a mélange from primitive documents, edited about the time of Solomon. The basis upon which this hypothesis rested was the discovery of Astrue, in 1753, that it is possible to separate the book into fragments distinguished respectively as Elohistic and Jehovistic. This author proposes to regard Genesis as compounded of twelve primitive memoirs, from which Moses is supposed to have composed in twelve columns, and subsequent confusion of which by copyists is presumed to account for the

present form. The next critic in order reduces the twelve fragments to two pre-Mosaic documents, distinguished by Elohim and Jehovah respectively. These the author copies and mixes quite to his fancy into narrative of more or less coherency.

Then comes Ilgen, with his seventeen original documents and only three authors—one Jehovist and two Elohists; then, De Witte, who connected the seventeen primitive records of Ilgen into one continuous Elohist record, into which the edition is supposed to have woven sundry Jehovistic fragments and many comments and corrections of his own; then, Von Bohlen, who agrees with De Witte so far as concerns the continuous narrative, but denies that any Jehovist fragments existed, and contends that all passages in which Jehovah occurs must be ascribed to the editor. Grumberg makes three authors—the Elohist, the Jehovist, and the editor, to whose unscrupulousness in substituting one name of deity for the other at different points he refers the irregular use of the two names.

Ewald is shifting and unsettled in his opinion. At first he held the unity of Genesis, and was remorseless in denouncing his opponents. Ten years later he proposed to find the basis of the book in a very ancient writing distinguished by peculiarities of style and by the use of Elohim for God up to Exodus vi. 2. This author, he thinks, incorporated into his work certain ancient documents; as, for example, the Decalogue and Exodus xxi, to xxiii., inclusive. Afterwards, says Ewald, there arose another work on ancient history, which ascribed the use of Jehovah to Abrahamie and even to Sethitic times, and portions of which were incorporated into the old Elohistic history by the author of Genesis in its present form, thus making at least four writers concerned in the book as it now exists. Still later, Ewald has another theory, and supposes more than two treatments of the ancient history included in the Five Books of Moses and the Book of Joshua. These several accounts were, he thinks, edited by somebody living in the time of Justlann.

286

Hüpfeldt accepts as the ground of the present Genesis three independent historic works, two Elohistic and one Jehovistic. and adds an editor. Knobel maintains that only two documents are concerned in it—first, the Elohistic, forming the basis of the Mosaic books and the books of Joshua; secondly, the Jehovistic primitive and the Jehovistic secondary narratives.

As Hengstenberg* and Havernickt have clearly indicated. this whole system of criticism rests upon the assumption that Elohim and Jehovah are synonymous names; while, on the contrary, Elohim is general, like the Greek Greek, and Jehovalı personal, like the Greek Zars, never taking the genitive case. Besides, as the same learned critics have pointed out, Elohim and Jehovah are by no means the only names of God emploved in Genesis. God is also styled El. El Elyon (Most High God), El Shaddei (God Almighty), and Adonai (the Lord), of which Ewald and his coadjutors take no proper account. Another fact that went far to destroy the fragment hypothesis was the discovery of the true origin of the word Jehovah from the old Semitic verb \$\pi\pi\pi\$ (to be), whereas the advocates of the hypothesis had assumed it to be cognate with the Latin Jove and the Greek Zevz, and through them referable to the Sanscrit devat. This crude example of philological invention furnished, however, the primitive germ of the mythological theory of Genesis, by connecting together the Hebrew record and the classical mythology in one common historical association. All history, said the Rationalists, begins in myth, and why should Jewish history be regarded as exceptional in this respect! Hence arose the theory which Strauss expounded, and of which he made a systematical application in his Leben Jesu, though with a higher acceptation of the term myth and with a more profound apprehension of the relations of symbols to spiritual truth.

^{*} Commentar über die Messianischen Weissagungen.

[†] Historisch-kritischen Einleitung des Alter Testament,

[‡] Real-encyclopadie für protestantische Theologie und Kirche. In Verhingdung mit Protestantischen Theologen und Gelehrten herausgegehen von Dr. Herzog.

The probable motive that impelled him to propose this special reconciliation of speculative criticism with the necessary spiritual facts underlying modern culture has been pointed out, and the main conclusions of biblical critics as they entered into the formation of his system have now been briefly noticed. To apprehend the philosophical standpoint from which he contemplated his task of reconciling the discordant elements, whose unstable equilibrium had so long troubled German theology, it is necessary curtly to review the subjective side of his hypothesis.

When, in 1831, he repaired to Berlin to complete his studies, that city was the speculative centre of Germany, and swaved in theological circles by the dreamiest of the dreamy. There, even to a greater extent than elsewhere, it was the fashion to study theology with the spectacles of the Hegelian intuition astride of the theological nose. The universe, according to Berlin, was but the continuous evolution of an infinite potentiality, apprehended mostly by Berlin professors; and the Absolute—that will-o'-the-wisp of German metaphysics was to be sought, not in the ideal substratum, which could not be a positive existence, nor in the matter-of-fact phenomenal, which could have no permanent reality, but in the perpetual process of self-evolution. Whatever existed was to be considered as having a necessary but merely transitory being: the ideal forever tending to realization, but being quite incapable of that to which it was forever tending. Besides, there was involved in Hegelism a positive denial of the personality of God, and a positive assertion of the incompleteness and inadequacy of all existences, and the absorption of the individual into the universally but unconsciously potential. Thus all existence was phenomenal and evanescent, and God but a blind potentiality breaking into bubbles of being! A more complete system of pantheism than this was never propounded. It would be absurd to say that it was not grand—ideal—for it But it was pantheism, nevertheless, and Marheinecke, Daub (whose biography was afterwards written by Strauss), and Göschel, at that time its exponents-for Hegel died four

years before the *Leben Jesu* was issued—were pantheists of the most fascinating type, though numbered as sound defenders of the faith.

Strange that they did not see it, but they did not! Strange that German theologians were so obtuse as not to discern the discrepancy! But they did not until the young Tubingen professor made a consistent application of it to biblical interpretation, and taxed them all with inconsistency. The old form of Rationalism, bald and ineffective, had been destroyed at Berlin by that dreamiest of theological dreamers, whose pupil Strauss was for six months, and from whom he caught the special form that his system assumed. He was now dead, and Neander was the lion of Berlin University, as Tholuck was of Halle, Steudel of Tubingen. The period was one of comparative calm, these several opposing elements of German thought working together in unstable equilibrium. Polarizing the special speculative mood of Berlin, but far enough from being identified with it to detect its inconsistency, he saw that the question must come up some time, and his purpose appears to have been to establish an ideal harmony between the speculative aspects of Berlin theology and the practical truths of religion, and thus to mould both into permanent and coherent system. His fundamental propositions were:

That miracles are à priori incredible, because inconsistent with the observed uniformities of nature.

2. That all accounts of supernatural intervention are myths, but myths enfolding and enkernelling profound spiritual conceptions. His definition of the myth is strictly in accord with these primary propositions, and applies to any narrative which mit bekanuten und soust überall geltender Gesetzen des Geschehens unvereinbar ist." That is to say, is inconsistent with the known and universally operative laws of nature.*

^{*} These myths of the New Testament have, according to Strauss, two distinct sources (quellen); the more ideal of them arising from the Messianic expectations and presages in circulation at that era; the more apparently historical from idealization of the traits and acts of Jesus at the hands of his disciples. Those of the first class are universal, those of the second contingent on personal aura.

There was nothing new in either of these propositions. Semler had applied the mythological hypothesis to the stories of Samson and of Esther, quoting Heyne's famous generalization that the history and philosophy of primitive man everywhere begins in myth; and Vater and De Wette had not scrupled to advocate the mythological interpretation of Old Testament history, at least in portions of the record; while Gabler, with sweeping and pitiless consistency, had openly held that all narratives involving angelic visitation had the essential manner of mythology. Even the Berlin mystic and dreamer, whose pupil Strauss had been, did not hesitate to consider the story of the Temptation as of mythical origin. Others had applied similar tests to the details of the Nativity and the Resurrection. On the other hand, he was the first to elaborate existing exegetical tendencies and expand them into a system, and to lay bare to theologians the fact that, in so far as their theological tenets were drawn from Hegel, those tenets were in opposition to orthodox theology. It was this, no less than the marvellous ingenuity with which he applied his principles to the exegesis of the Gospels, that contributed to bring on a new crisis in Germany; and the fact, that he clearly indicated the discrepancy, and thus, impliedly at least, accused contemporary theologians of stupidity, was, no doubt, one of the causes of the acrimony visited upon the great exponent of ideology-for his book appears to have been an honest attempt at reconciliation, not a mere melange of critical and philosophical tenets, by way of producing a readable volume. So loving of harmony was he that a German journalist who knew him well writes, his passer temps in pleasanter moods was to walk to and fro in his study, repeating in the rare monotone his pupils will all remember, Schiller's beautiful stanza:

> "Soul-traneing melodies together woven, A sheaf of voices sweet and dim, Rain from the strings, as from the highest heaven Drop down the songs of Seraphim."

290

But to return. The key-note—the motif—of the work is struck in the very first sentence of the preliminary explanation (Ausbilding des mythischen standpunkets), and an extremely long and sonorous sentence it is. "Wherever," says he, "a religion founded upon written documents expands itself in space and time, and survives through a culture of its followers more complex and artistic than that in which it originated, there comes about, sooner or later, a discrepancy between the ancient form in which it was delivered and the new culture with which it is interfused, and which as sacred script accepts its written works."* It would be impossible to deny the fact that, considered as the enunciation of a general principle, this , sentence is consistent with the results of actual observation. The Greeks, in the days of Plato, had already found it necessary to regard their myths as symbolizing profound truths, as is evident from the works of that philosopher, and equally evident from contrast of Pindar's under-world with that of Homer. Anaxagoras is accredited with the invention of the allegorical method of exegesis as applied to the religious remains of the Hellenes: for Homer's gods, says the ancient philosopher, did many things inconsistent with the nature of gods, which must be regarded as allegories intended to elucidate a mystic principle, rather than as literal assertions to be literally interpreted; and how far Pindar, with all his poetic insight and his many tentative solutions of the religious problems that vexed his lyrics, was bitten with the budding skepticism of his age, is indicated by his sad reply, in one of the Olympics, to the question, What is man, great or small, high or low, or, as the text runs, nobody or somebody? "The dream of a shadow is man,"† answers the poet in three words, that an

^{*} Wo immer eine auf schriftliche Denkenale sich stützende Religion im weiteren Raumund Zeitgebieten sich geltend macht, und ihre Bekenner durch mannigfaltige und immer höhor steigende Entwicklungs und Bildungsstufen hegleitet: da that sich früher oder später eine Differenz hervor gevischen demjenigen was jene Urkunder bieten, und der neuen Bildung derer, welche an dieselben als an heilige Bücher gewiessen eind.

[†] εκιας ανασ ανθρωπας.

anonymous rhymester translates and expands in the quaint quatrain:

"Man is he knows not what;
He comes he knows not whence;
His whither knows he not,
Save that he passes hence."

And although he afterwards adduces many consolations, among them that by and by comes the hero-man, clad in strength, as with the skin of a lion he has slain with his own hand, he never once denies the validity of his initial proposition, that, sooner or later, this view of man and his destiny forces itself upon our religious reveries, culture having risen to a certain mark, appears to be established by the intellectual history of the ancients, as a universal principle; and thus far Strauss was right On the other hand, the question at issue was one that regarded a matter of history and a religion grounded upon certain narratives assumed to be fact. Jesus was an active worker, not a dreamer and idealist. He elaborated no mystic ritual, the symbols of which were to turn obsolete with the lapse of ages. His religion was a religion of the life, encumbered with no rhythmic round of mysteries, resting upon no ephemeral tenets of philosophy. The life of faith, the life good, and the life beautiful—through them the life eternal—formed the burden of his brief but wonderful expositions. Thus, linked to surpassing simplicity and surpassing pathos of beauty, his life and his atterances partake of the nature of the universal. No culture can outrun them, because, although the special forms of civilization are Protean, they are potential elements in the best and the most beautiful—the most sublimated and ideal—that human culture can assume. Hence their relation to human life was permanent, while that of the myth, Greek or Gothic, was ephemeral; and so obvious as a proposition in the study of comparative religion is this fact that Max Muller accepts and grounds his whole system upon it. That, with all his learning and acumen, Strauss should not have detected this distinction, witnesses to the philosophical bias that controlled the production of the Leben Jesu, and forced him to subordinate his exeges and his criticism of the text to certain fixed and inflexible Hegelian institutes. What those institutes were is illustrated by the following passages, which contain the philosophical pith and basis of that famous work:

"When God is spoken of as a spirit, it is necessarily implied that man is spirit also, since neither can be separated from the other. More correctly, since it is essentially the nature of spirit in distributing itself into individuals to remain identical with itself, the cognition of God as spirit includes this, that God exists, not as a barren, absolute, external to and beyond the relative, but enters into the finite as nature, and the human soul only as his externality ceases, he forever returns to unity with himself. As man, as finite and as spirit conditioned in time and space, has not truth: so God, as infinite and unconditioned in his infinity, has not reality: for the finite spirit is only true to itself when it sinks itself in the infinite. The true and real being of spirit, then, is neither as God by himself, nor as man by himself, but as God-man,

"If God and man are one, and religion is the human side of this unity, then must religion for man consist in the cognition and reality of God as spirit."

These two striking paragraphs describe the speculative institutes that form the intellectual basis of the work under consideration better than any prolonged and exhaustive analysis could, and those who regard the literary activity of its author from the standpoint of biblical criticism, rather than from that of philosophical system, err in their estimates of him as a man and as a thinker. Attention has been mainly directed in Eng-

Wenn Gott als Geist ausge-prochen wird, so liegt darin, da auch der Mensch Geist ist, bereits, dass beide an zich nicht verschieden sind. Näher ist in der Erkenntniss Gottes als Geistes, da der Geist wesentlich dies ist, in der Unterscheidung winer von sich identisch mut sich zu bledsen, dies enthalten, dass Gott nicht als sprödes unesalliche auswer und über dem Endlichen verharrt, sondern in elasselle eingelt, die Endlichkeit, die Natur und der menschlichen Geist, nur als zeine Enduösserung setzt aus der er ehende ewig wichter in die Enhait mit sich selbst zurückkehrt. So wenig der Mensch als bloss untellicher und an seiner Endlichkeit festhaltender Geist Wahrheit hat; so wenig hat Gott als bloss unendlich er in seiner unendlichkeit sich absolutiessender Geist Werklichkeit; wie der endliche Geist nur dann wahrer ist wenn er in den unendlichen sich verlieft. Des wahre und wirkliche Dusein des Geistes also ist weder Gott für sich, noch der Mensch für sich, sondern der Gottmensch.

Sind Gott und Mensch un sich Eins, und ist die Religion die menschliehe Seite dieser Einheit: so muss diese in der Religion für den Menschen werden, in ihm zum Bewusstsein und zur Werklichkeit kommen.

land and America to the exegetical and critical aspects of his work, because, the doctrines of Hegel having no vitality from the point of view adopted by English-speaking theologians, these aspects only were of importance to English and American readers. Thus the general student, except in Germany, has been led insensibly to class him with the mere textual critics of the New Testament, always ready to find a flaw or detect and make the most of a verbal discrepancy, than which nothing can be more unjust to the memory of the dead. The intellectual and moral attitude of the Tubingen dreamer is of a type higher and more earnest than that of the skeptic who is unbelieving for the mere luxury that the sensation of skepticism imparts. As is evident from the foregoing passages, he fancied, in the enthusiasm of his youth, that he had penetrated to the substratum whence the profound vearnings that find vent in religious faith and in mystic dreams of the God-man. He saw himself handed down to posterity as the first to elaborate a permanent philosophy of theanthropy, and to bring the special facts that everywhere, and in all races, repeat themselves in myths of incarnation, under the dominion of a universal principle. God and man are one, and religion is the human side of this unity; and the true and real being of spirit is neither as God per se nor as man per se, but as Godman.† Man has no truth to his inner self, except as God; God has no consciousness of reality, except as man.;

^{*} Sind Gott und Mensch un sich Eins, und ist die Religion die menschliche Seite dieser Einheit.

[†] Das wahre und wirkliche Dasien des Geistes also ist weder Gott für sich, noch der Mensch für sich, sondern der Gottmensch.

[‡] With our more observational habits of thought, it is not easy to estimate the force that these propositions carried to the German mind in 1835, or even to understand how they should have had any force at all: so difficult is it to enter into vital sympathy with opposing modes of thought. On the other hand, what force they had in Germany is evinced by the universal admiration of Hegel's Philosophie des Geistes, and its reception for almost half a century as the utmost in its special direction; whereas to our minds, disabused of the metaphysical culture by Bacon, Hegel's system appeals only as a splendid work of philosophical fiction—a mere magnificent poem, only separated from "Paradise Lost" by lack of thythm.

It is this last position that tethers him to Hegelism* as to a pivot, and prevents him from rising to a full comprehension of the historical value of the life of Jesus as the God-man. and the perfect examples of the ideal manhood. His violent expulsion of the supernatural from his biography of the Godman, whose inner life he sought to unfold and elucidate, was one of the results of this unfortunate philosophical tenet, and serves to exhibit the spiritual importance of Hegel's main theorem. "The rational is the real." From this to the hopeless materalism of his last work: man an insect blindly groping about on this great ball of matter: God an universum blindly expressing itself in nature. It is but a single step, though he was almost forty years in taking it; and what makes his career all the sadder is, that the spiritual cravings within him should have held him back so long, and yet should have permitted him to fulfil the logical end of his system at the last, when, a white-haired old man, he drops into materialism and into the great grave of matter at one tottering fall. For nearly forty years he hung fascinated over the abyss of nothingness, then swayed for a moment upon the vergeand fell.

It has been our task thus to furnish the materials for an accurate and unbiased apprehension of Strauss's intellectual attitude, and of the influences that contributed to the formation of that attitude. It now remains to discuss the critical and scientific aspects of his two great works—the one initial, the other final; and, in doing this, our stand-point will be that of pure criticism, not that of theology.

The time seems to have come when it is possible to separate the question of historical authenticity from that of inspiration, and to discuss the two questions *seriatim*. The former, as part and parcel of historical criticism in the modern acceptation of the term, is within the function of the lay reviewer; and it may be as well to begin by stating it as a fair lay con-

Phünomenologie des Geistes.

Logik. Edited by Dr. Von Henning.

clusion that, whatever else it may be, and howsoever it may have originated, no part of the Book of Genesis, with the possible exception of the story of Eden, is essentially mythical. Indeed, as Lange* conclusively demonstrates, the book has the manner of primitive family record, and though written in the third person—a habit common in ancient documents—is essentially biographical. Happily, besides establishing the authenticity of certain events in Jewish history, the discovery of the Moabite stone settles certain questions as to the ancient oriental method of composition. The God is uppermost; the man is impelled hither and thither at the mandate of his Deity, be it the Khemosh of Moab, or the Jehovah of the Jews. The whole tenor of the inscription bears forcibly upon the decision of this point. Khemosh says unto Mesha, King of Moab, "Make war against the Hebrews," and he makes it. In a similar manner, the tablets exhumed by Mr. George Smith, of the British Museum, which have aided so materially to furnish the missing links in Assyrian and Babylonian history, represents the God as acting through the man as his agent. It is this stand-point of the narrator that accounts for the attitude of King Mesha in regarding himself as a third person in the composition of the Moabite tablet; while the attitude of the narrator in relation to the event similarly accounts for the use of the third person singular in the preparation of his narrative in instances where it is really autobiographical. For example, in Genesis, xxii., 1-19 inclusive, in which the temptation to offer Isaac upon the altar is detailed, the fact that Abraham is spoken of in the third person in no way militates against the hypothesis that Abraham was personally the author of the narrative.

It follows, also, as an induction from these facts, that the element of the supernatural and miraculous in ancient writings is neither essentially nor intentionally mythical. Whether this element be accepted as fact or treated as illusion, it was

Die Genesis nebst Einleitung in das Alte Testament,

⁺ The Moubite Stone, London, 1873.

certainly fact to the writers of oriental antiquity, and thus, instead of appearing as a mythical element, it appeals to criticism as a psychological element of these fragmentary and primitive compositions. These elements, therefore, enter into the composition of Genesis in common with most antique documents. They are: First, the element of objective historical fact, consisting in the main of memoranda of events and of genealogical tables. Secondly, the element of subjective psychological experience, eventuating in a tinge of the supernatural and miraculous, which represents the writer's construction and interpretation of the facts, and interpenetrates with peculiar and often weird significance.

Critics may accept the facts, without accepting the writer's interpretation of them or admitting the validity of his subjective experiences, or they may accept both: but acceptance of the former by no means involves acceptance of the latter as a necessary consequence; although, in either case, one isbound to accept the writer's sincerity and good faith in the construction he puts upon the facts of his story. Thus, the reader may agree that Abraham had a dream, as related in Genesis xv., 1-7, and may also agree to his good faith in the construction he puts upon it, without necessarily agreeing that the construction is scientifically sound: and so on, and so on, through the whole series. In a word, the Mosaic record consists of two interwoven series of facts-the historical and the psychological; and when Abraham narrates his journey into Egypt, and the facts that occurred there, the reader has an example of the former, which, except for good reasons, he is scarcely at liberty to doubt; while, when he speaks of himself as talking with Jehovah, or conversing with angels, the reader has to deal with elements of a pyschological type, as concerns in which his necessary attitude is, that whether objectively true, or whether illusory, they are actual subjective experi-To a more limited extent this principle of criticism applies to modern narrative composition, which, in common with ancient, necessarily consists of the facts narrated, and of the author's special view of their relations to each other, and to the general, which the reader may accept or reject. In short, this discrimination of narrative into two elements, the one consisting of events, the other subjective perception of events in their relation to the universal, is a fundamental principle of historical criticism considered as a method of determination.

Accepting the conclusion of Dr. Seyfforth* that the alphabet was invented by the antediluvians, it is clear that the only admissible hypothesis of Genesis is that which presumes a series of documents preserved and added to as family records from the remote era of Seth, to whom Semitic tradition ascribes the discovery of alphabetic writing, down to the Mosaic period. The principal names of God, Elohim, and Jehovah, employed in the text, so far from being criteria to its division into documents, are invariably limited to specific purposes: the one, as Kurtz† indicates, representing God as creating and standing at the head of the universe; the other, God as he enters into history and reveals himself to man within the historical circle.

Many curious facts bearing upon the inadequacy of the mythological hypothesis have lately come to light. It has, for instance, long been held as an objection to the historical authenticity of the Book of Daniel, that, at the period when the seer professes to have been held captive in Babylon, Nabonadakh was actually king, not only at the date of the dream described in Daniel iv., 4–24, but also at the date when the city fell into the hands of the Medes; whereas, Belshazzar is represented in the record as having superseded Nabonadakh previous to that event. It was also certain from profane sources, that the king of Babylon was not slain, but made prisoner, during the Median conquest. Recent discoveries have not only proved that Nabonadakh was afflicted with a season of madness, as stated by Daniel, but that Belshazzar was his son,

^{*}Grammatica Ægyptiaca. Erste Aulutung zum Nehersetzen altägyptischer Literaturwerke, nebst der Geschichte des Hieroglyphen. Schlüssels.

[†] Lehrbruck der heiligen Geschichte.

and, at the date of its destruction, viceroy or governor of the city, with the fall of which he fell. This fact explains how it was that Belshazzar, Daniel v., 16, promised to make the prophet third (not second) in the kingdom, if he would but make known the interpretation of the handwriting on the wall. Ex uno disce omnes, our limits precluding further enumeration.

In the same manner as these important discoveries rescue the Book of Daniel from mythology, Dr. Tischendorf's discovery of the long lost and oft lamented Sinaitic cortex of the gospels is destructive of the mythical hypothesis as applied by Strauss to the life of Jesus, and sustains the objection to that view upon which Dean Milman dwells with peculiar emphasis, namely—that the age represented by the first and second centuries was not a myth-forming age, and that the Jews as a people have no mythopæic tendencies.

Aside from the question of inspiration, therefore, to the historical critic, Jewish literature appears in the light of a literature exhibiting peculiar dynamic and psychological facts, eminently illustrative of the psychical traits of the Jewish race. Between it and the linguistic structure with which it is connected obtains a unity that is both artistic and historical, both crescent and static. In contrast with classical literature and with the most antique products of the Aryan races, the Vedas and the Avesta, the ancient literature of the Hebrews is distinguished by a strange and settled interiority of mind, united to a kind of gloomy and resolute fanaticism. Its words are not pictures, like those with which Homer had to deal, but have a curious subjective consciousness in harmony with the psychological traits from whence they sprung and to the expression of which they are so singularly adapted. Impossible as it is for the modern critic to enter into sympathetic contact with a culture so peculiar, joined to a race so persistent, he can not fail to apprehend somewhat of its tremendous force and momentum,* in the consideration that it has con-

^{*} It is a peculiar trait of all ancient cultures that, owing to the race prejudice that pervades them, they move with tremendous mental momentum in special directions. In the asthetic arts, for instance, the

trolled and given bent to the whole structure of European culture as represented by the nineteenth century; that no skepticism has availed to destroy its vitality, and that no philosophy has been able to supplant it, while all philosophies have struggled together to offer some adequate rational solution of its indwelling spiritual facts, and, failing to solve, have given away before them. Schelling's *Philosophic der Affenburung* and Strauss's *Leben Jesu* are alike in this respect.

Starting with Abraham, in whom this interiority first presents itself vividly, the student is able to trace its ever augmenting intensity, fostered by the conception of a destiny extending into the remote and distant, until it assumes the aspect of a family trait, and finally that of a national trait, which occurs in the days of Moses. Parallel with this conception of destiny runs, as its necessary moral exponent, a mystic faith that from generation to generation intensifies this strange tendency to interiority, which is further reinforced in intensity by what scientific men know as the system of breeding in and in. Beginning with Shem, the length of time during which this culture was in process of formation, may be calculated as follows. The table is taken from Seyfforth:

Greeks show an advance and elevation of feeling, to which modern sculpture has never approximated. They seem also not only to have originated philosophy, but to have carried it to a structural perfection which modern thinkers have emulated but not surpassed. In the Hebrew culture occurs a spiritual momentum exhibited nowhere else in the history of civilization. It is a trait of modern culture that it represents the various momenta of the ancient, working together in equilibrium more or less unstable; but its boasted superiority over the ancients, except in this attribute of universality, is more than questionable. As a method of criticism, for example, the Greeks originated induction, and were keen in their observation of facts. They were first to discover that insanity is a disease, and to treat the insane as sufferers, not as persons possessed of devils; and it is only within the present century that this method has been engrafted upon modern life. On the other hand, in the practical application of science to the material arts, and especially to labor-saving inventions, modern civilization appears to exhibit an advantage over ancient. Of railroads and steam engines ancient life offers no glimpses. On the contrary, its vast works of engineering and building put to shame our boasted scientific progress.

Noah's entrance into the ark.....3447, B. C., November 8, Julian style.

Jews leave Egypt...... 1866, B. C., April 5, Sunday.

Encamp at Marah " " April 12, Sunday.

Enter the Desert of Sin.... " May 20.

Receive the legislation of

Moses from Mount Sinai... " " July 8.

David begins to reign..... 1029, B. C.

Solomon ascends the throne... 989, B. C.

With which commences what may be styled the literary period of the Hebrews.*

Thus, for more than two thousand years before Solomon the Jewish culture having one central idea of destiny, and continually intensifying the psychological traits with which it set out, was in process of formation, when came its natural blossom in those weird prophetic poems that stand alone in the history of literature. Time enough here to account for

^{*}That Genesis was in existence long enough before this period is obvious from the crudeness of its style and its antiquated philological forms. Some of its word-forms were hoar with antiquity as early as the days of Joshua; and yet it is obvious that none of it was written until after the ancient havah, to be, whence Jehovah, had been superseded by the softer hayah. Traces of havah, as a formative, cease to occur as early as the days of Abraham; and, from thenceforward, antiquated forms begin to disappear or to be superseded by later derivatives; though there are vestiges even in the Abrahamic Hebrew of an earlier inflection, especially of nouns, the details of which are now lost altogether. Now, language progresses by stages of evolution, at the head of which stands the period of roots, of which no family numbers more than four or five hundred. Next comes the period of agglutination, of the laws of which philology knows very little. Next ensues a period of very complicated noun inflection, which waxes simpler as civilization proceeds with the evolution of modifying adjectives; and speedily a similar complication of inflection, fold upon fold, attacks the verb, which is twisted in body and tormented with prefixes and affixes, by way of expressing that which is afterwards expressed by adverbs, prepositions, and other modifiers. As the evolution of modifiers is continued this complexity of inflection and conjugation disappears, and thus language in its higher stages of cultivation manifests a tendency to return to primitive simplicity.

the permanent modifications of cerebral structure, necessary, perhaps, from the scientific stand-point, to develop from the tendency to interiority and the mystic faith in Jehovah and destiny with which Jewish history began, the wellmarked prophetic insight with which it ended. As there is no psychological trait without its physiological exponent, it is, indeed, difficult to imagine that a culture so narrow, and because so narrow, therefore so tremendous in its momentum, should have persisted for so long without eventuating in a well-marked cerebral differentiation: for the facts of the Jewish history, united to the habit of breeding in and in, fulfil all the conditions essential to the evolution of a special type of humanity, endowed with special aptitudes and with special spiritual traits; and if, as Strauss says, sind Gott und Mensch au sich eins, it is needless to look further than these apparent facts of the Hebrew culture, to account upon scientific principles for the aura that radiates from the subject of his biography.

Though generally unsatisfactory in its scientific aspects, his last volume is painfully weak nowhere except in

The Hebrew of the Book of Genesis belongs to that era of linguistic progress when the noun inflection begins to be supplanted by modifiers, and the verbal inflection has not yet attained the climax of complication. The period of agglutination has been passed, but yet vestiges of the process remain, as, for example, in the primitive maor, the sun, from or, light, and in the derivation of some few proper names. These facts alone, aside from antiquations of diction and special words, argue a primitive antiquity of origin, not to be attributed to any other existing documents. But, aside from these considerations, certain Arvan words appear to be traceable to Genesis. Thus—the Greek erchos equals the Hebrew erch, the Greek phos is the Hebrew pe, pous, and the Hamitic phatha. Mater in Latin equals am in Hebrew; pater, ab, Vulcan, reproduces Tubal-Cain; Apollo, Jubal. Again, the Latin olim is equivalent to the Semitic olm; the Latin aevum and the Greek aion, having lost digamma, are from the Semitic havah, to be, and the strengthened hhayah, to live. The Greek kadmos represents the Hebrew kedem, the last; the Latin capio, to take, refers itself to the Semitic koph, the hand. The Greek hemera, day, is the Semitic your; and even the Semitic tsade (75) reappears, name and force, in the Teutonic tsett.

certain assumptions drawn from the system of psychology generally designated as cerebral, in order to distinguish it from the antiquated and à priori system in vogue during the last century, which took no adequate note of the facts of brain anatomy, to the study of which Gall and Spurzheim gave its first impulse. In this important department the doctrines of Strauss are not in harmony with facts recently discovered. but not so recently as not to have entered to some extent into current scientific literature. Briefly condensed, his view is that of the human brain as a congeries of nerve-centres, said nerve-centres respectively representing certain mental aptitudes. Mind is composed of these aggregated aptitudes. This view expunges self-consciousness, except as the result of the succession of ideas, or of states of consciousness,* and is co-incident with that advocated so ably by John Stuart Mill. in his famous critique on Coleridge. Unfortunately for its advocates, however, the recent but now experimentally verified discovery, that the cortical surface of the cerebrum is the seat of consciousness, t is fatal to this carefully elaborated theory, since it demonstrates that the nerve centres merely answer the purpose of co-ordinating given physical processes. Thus the cerebellar centres co-ordinate the muscles concerned in locomotion; while a nerve-centre located in the lower portion of the left anterior lobe of the cerebrum co-ordinates the muscles concerned in articulation. Again. while certain great elements concerned in the configuration of the brain are constant, there is some variation in the number of the convolutions-a fact which tends to negative the pretensions of phrenology, which bases its distribution of faculties upon the constancy of these mounds of brain substance, bounded by their co-incident furrows. Indeed, this congeries of somewhat irregular convex surfaces, so far from having any special psychological significance, is now known to be the exponent of cerebral nutrition, which is deposited in

^{*} Herbert Spencer's Principles of Psychology.

[†] Ecker's Cerebral Convolutions of Man.

[!] Flint's Functions of the Cerebellum.

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arcs or hillocks.* The general consequence of these facts is to reaffirm the so long denied unity of mind and to reinstate self-consciousness as the ground of all faculty, and not as a mere association in the terms of James Mill and his son and The special consequence of the same is, that the cortex of the brain may be logically regarded as the point of union between mind and organism; and thus though man is not thereby strictly enjoined to consider himself as having a soul, he may with justice maintain that he has scientific permission to have one, if he wishes. That is to say, that spirit and spontaneity are not, as Huxleyt assumes, necessarily cast out by matter and law. In a general way, the discovery of these facts reinstates metaphysical studies in their old position, and enables men of thought, if they will, to mark out a really careful and profound system of psychology, by giving their proper weight and significance to introspective analysis, on the one hand, and to physiological causes on the other; a system of psychology that shall cover and offer ample verge to the profounder facts of spiritual dynamics, as the history of the Jews and the life of Jesus illustrate them, while, at the same time, elucidating and putting order into the common facts of human life; a system that shall admit the reality of the softer spiritual undertones the instrument, man, gives forth, and explain the deeper and more mystical cognition incident to what is generally styled inspiration. So important, in this respect, is the recognition of the unity of mind and of the validity of self-consciousness, that the gist of the controversy may be compressed into two sentences: If I am, then God is, and nature is; if I am not, then nothing is. That is to say, the whole web of spiritual life man has woven about himself, and all the sweet but indistinct spiritual undertones of life, are dreams—dreams all—nothing but dreams if Herr Strauss is right in his travesty in his last volume of M. Phillips. But had he—instead of following the current

^{*} Ecker's Cerebral Convolutions of Man.

[†] Lay Sermons, Dissertations on Molecular Physics.

text-books, into which the latest discoveries are never incorporated—kept record of the brief report of Dr. Ecker, and of the experiments of Professor Ferrier,* of Aberdeen University, he would scarcely have added this final blunder of mis-information in scientific matters to his many blunders in historical criticism.

Once more. How closely related to the special facts of the life of Abraham these discoveries are, is indicated by the fact that one of them unlocks the philosophy of trance, and places this hitherto obscure phenomenon upon a sound physiological basis. Long before Dr. Ecker and Professor Ferrier had conclusively proved that the cortex (gray matter) of the brain is the seat of consciousness, Dr. Maudsley, England's foremost alienist, had observed from repeated autopsy, that true insanity is always the exponent of a morbid pathology of the gray cerebral envelope, and this is his physiological definition of madness. † Experiments have also demonstrated the fact (parallel to that announced by Dr. Maudsley), that clairvoyance and trance, whether cataleptic or epileptic, are the psychological exponents of abnormal activity of the cerebral cortex, accompanied with partial or total suspension of nervous activity in the cerebro spinal axis; furthermore, that trance may be induced by sulphuric ether and other anæsthetic agents, particularly in instances of settled interiority of mind like that which distinguishes Jewish literature. The induction from these facts may be stated as follows: Trance is a psychological phenomenon, having its physiological exponent in abnormal excitability of the cere-The tendency to trance is hereditary, resembral cortex. bling other types of neurosis in this respect; but whether its transmission from generation to generation, as occurred with the Jewish prophets, is accompanied by modifications of the substance of the cortex, or by modification of functions only,

^{*} London Medical Record, volume for 1873.

[†] System of Medicine, article on Insanity.

[.] Haddock's Psychology Considered Physiologically.

there are no special facts to indicate, although the general facts of psychological medicine imply the former so positively as to render it almost a necessary sequence. As the learned Broca has conclusively demonstrated to the members of the Anthropological Society of Paris, culture is specially influential in determining the volume and structure of the brain, particularly as respects the anterior and coronal lobes,* of which latter in the Jewish race the volume is especially large. peculiar mental aura concerned in what is styled inspiration may, therefore, be accounted for upon strictly scientific principles.† On the other hand, whether the spiritual visions incident to this last degree of settled interiority are the exponents of actual spiritual realities, or whether they are to be treated as illusions, is a question that concerns theologians, and lies beyond the scope of scientific analysis, though superimposed upon it, within the great religious dreamland of God, the soul, destiny after death, and intervention of the supernatural.

Necessary limits preclude elaboration of the facts in hand. They are certainly destructive of the theories of Strauss, whether regarded from a metaphysical or from a scientific aspect. Men, says a clever critic, are generally right in what they affirm and wrong in what they deny. In other terms, so complex are the phenomena of life and nature, that it is folly to adopt any particular system in observing and measuring them, or to oppose barren denial to vital facts. When Strauss adopted Hegelism as an intellectual basis for his theory of life and being, he virtually tethered himself to a system that precluded candid investigation, and forced him to deny the reality of certain series of well-attested phenomena. Not

^{*} Revue Scientifique, volume for 1873.

^{+ &}quot;It is," says Dr. Bain in his last volume, "because men have something beyond the usual endowments of natural things in the possibility of storing up in three pounds' weight of a fatty and albuminous tissue, done into fine threads and corpuscles, all these complicated groupings that make our natural and acquired aptitudes, and all our knowledge."

that he consciously or deliberately accepted this position. the contrary, his attitude was a mental habit acquired by exclusively metaphysical studies. He saw life through the spectacles of Hegel-men as trees walking. Actual observation of nature would have corrected this; but actual observation is seldom with theologians. Thus his theorizing tendency led to ghostly and unreal speculations. He played at battledore and shuttlecock with logical shadows, none the less unreason-. able, because they were rational and coherent, and having no vital sympathy with the facts they sought to explain. knew nothing of life as it is, of its strong endeavor, of its passionate struggle after the good and the beautiful, of the mystic faith that struggle begets, and of which it is the exponent; but he knew a great deal of life as Hegel thought it was. Vast and vague generalizations were present in the books he read and in the mental atmosphere that surrounded him. These were his nutrition; and where a more profound intellect would have questioned, or a more scientific mind would have sought to verify, he accepted without applying the necessary tests. Hence, controlled as he was by certain metaphysical forms of thought, the scientific attitude, with its passion for observing at first hand and its wariness of generalizing, was impossible to him; and in so far as he seemed to be scientific in exegesis, he but repeated Baur, Ewald and others that preceded him. Thus his exegetical criticisms are many of them monuments of ingenuity; but, invariably setting out with the intention of coming to a given conclusion, they lack the candid honesty that distinguishes really scientific inquiry. For example, in applying the scientific method to the miracles recorded in the New Testament, it is necessary to ascertain whether the writers actually witnessed the phenomena, whether they were competent observers, and whether they were men of veracity. The first question to be settled is purely a question of fact. Explanation comes afterwards. Strauss reversed this method, and was hence unscientific in his attitude. Again, when the great scientific hypotheses of Spencer and Darwin were promulgated, his attitude was equally

unscientific. The psychology of the one, and the vast biological speculations of the other, he seems—to judge from his last book—to have accepted without test and without verification, the more implicitly, perhaps, because they were parallel with Hegel's system. Then comes the abstruse speculations of Huxley and Helmshadz in the direction of molecular physics, and supplies the basis for his *Universum* as a substitute for the unconscious *Gott* in vogue in old days at Berlin. Thus the barren materialism of his last elaborate work is parallel with the barren idealism of his first.

- Art V.—1. Geology, Introductory, Descriptive, and Practical By D. T. Ansted, M. A., F. R. S., F. G. S. 2 vols. 1844.
- 2. Memoires de la Societé Geologique de France.
- 3. The World before the Deluge. By L. Figuier. Revised by H. W. Bristow, F. R. S. 1 vol. 8vo. New York.
- Manual of Geology. By James D. Dana, LL. D. 1 vol. 8vo., 800 pp. New York.

The ability to interpret correctly all, or even a considerable part of the phenomena of nature, implies a high order of development of those faculties in the mind of man, which pre-eminently distinguish the true natural philosopher, and raise him above the common investigator of the laws and operations of the material world. Minds of such a character usually bring about new eras in the progress of science, during which great advances are made, and the domain of the mind in the natural world is vastly extended. Among the moderns we may mention Galileo, Kepler, Newton, Harvey, Humboldt, Thomas Young, and Lyell, as possessing minds of this character. Hypothesis is often substituted for an attentive examination of nature's phenomena, and the

mind of the investigator warps the facts which are observed, and makes them tell what they do not mean. Not unfrequently conclusions are too hastily drawn—drawn from an insufficient number of facts, and the progress of true knowledge seems to be retarded rather than advanced. We say that the progress of science seems to be retarded, for in reality it is not, because the agitation of thought on any subject, however erroneous the views entertained by the investigator may be, can but have a beneficial influence on the extension of real knowledge.

There was an opinion formerly entertained, and perhaps not wholly discarded yet, that, with slight exceptions, terrestrial climate has been gradually refrigerated, reckoning from the earliest geological formations of the earth's crust. conclusion was based on the existence of the remains of plants and animals in the earth's strata, in what are now temperate latitudes, the development of which seems to have required a tropical climate. In addition to this evidence, the rocky part of the earth's crust showed evident signs of having been wholly or in part subject to intense heat, which condition was thought to have been a result of the primitive molten state of the whole earth. Starting with this hypothesis, the geologist conceived that the radiation of heat from the interior of the earth-which, until recently, was supposed to be in a melted condition—produced a warm climate, probably over the whole surface of the globe, corresponding to the present tropical climate of the earth. The amount of heat which the surface of the earth would derive from the interior, in a given limited period of time, would thus gradually grow less and less, as the earth gradually parted with its primitive heat.

Although the views of geologists have undergone a change in respect to the condition of things as they relate to the present crust of the earth, the belief in rapid changes and much more powerful causes in early periods of the earth's physical history than at present exist, being less general than formerly; yet there is not much doubt that the surface temperature of the earth has been increased by heat derived from

the interior; for experiments have shown that even in our own time a considerable amount is radiated away into space.* This being the case, the earth must be gradually growing colder, for the solar heat does not penetrate very far into the earth's strata,† and it cannot be the source of the inherent temperature of the globe. Since the heat of the earth must have formerly been greater than at present, this inherent heat would raise the surface temperature somewhat, but, probably, not very much, unless we carry our ideas back to a very early period.

The idea that the climate of the earth was once much colder than at present has rather forced itself upon the minds of geologists than been willingly accepted. For some time the phenomena of the drift period in geological history were in a great measure a stumbling block to inquirers, and served rather to tell us how little we knew of geological causes than The general appearances pointed to a wide-spread and powerful cause, but just what that cause could be was uncertain-at least there was no general agreement among physical geologists. The careful study of existing glaciers, however, and their attendant phenomena, suggested to the mind the fact that the phenomena of drift; could be explained by the action of glaciers. In 1837 the late M. Agassiz promulgated what is known as the glacier theory, and by means of it geologists have been able to explain in a satisfactory manner a large part, if not the whole, of the appearances presented by the drift period.

Having thus reduced the causes which produced the drift to the action of extinct glaciers, which seem to have nearly or quite covered the land in temperate and polar latitudes, their existence could only be accounted for by supposing the climate immediately (geologically speaking) preceding, and during the drift period, to have been much colder than the present. Since the climate of the earlier geological periods

^{*} Am. Jour. Sci., [3] vol. v., p. 220.

[†] See N. Q. R., No. LII., p. 358. ‡ N. Q. R., No. LV., p. 56.

was certainly as warm as the present, and very probably much warmer, we conclude that there exist in nature causes sufficiently powerful to produce alternately climates which we regard as warm and cold. The glacial climate, or the climate which gave rise to the extensive existence of glaciers, both valley and continental—a climate which immediately preceded the present, and, indeed, of which the present may be considered as the remnant—may be but the repetition of an older glacial climate, though at present we have not much evidence that such is the fact.

As to the climate that prevailed previously to the glacial climate, we may state that Miocene (one of the divisions of the Tertiary period*) fossil flora, which could have grown only in a mild climate, have been found as far north as Iceland, Greenland, and even Spitzbergen. Lyell, in speaking of these, says that "such a vigorous growth of fossil trees in a country within 12° of the pole, where there are now scarcely any shrubs except a dwarf willow, and where there are only a few herbaceous and cryptogamous plants, most of the surface being covered with snow and ice, is truly remarkable." †

In previous numbers of this journal‡ we have given a brief history of the progress of geological theories, and have shown that in most cases the effort has been made to account for geological phenomena by means of sudden changes and revolutions, preceded and followed by periods of repose. The same disposition of the human mind has hitherto sought to account for the phenomena which attended the glacial climate. We have, however, no direct evidence of sudden catastrophes in geological history, except on a very limited scale, such as are produced by volcanoes and earthquakes.

^{*} If we commence at the surface in any place where the geological series of rocks is complete, we should find in order downward the Recent and the Post-Pliocene, forming the Post-Tertiary; the Newer Pliocene, the older Pliocene; the Upper Miocene, and the Lower Miocene; and the Upper, Middle, and Lower Eocene, forming the Tertiary period.

[†] Principles of Geol., vol. i, p. 202.

[#] See Nos. XLIII. and LII.

Since, so far as we can see, there is plenty of time in nature to accomplish all the changes which we see have taken place in the earth's crust, even if we admit only such causes as are now in operation, we are in duty bound, as true philosophers of nature, to call to our assistance no more powerful forces, unless we have the most irrefragable testimony that they have actually been in operation. Having assured ourselves that there once existed what may properly be called a glacial climate, our next object must be to account for it in a rational manner. Proofs of the present existence of glaciers, and of the former more extensive existence of them—which required a much colder climate than the present—have already been given in this journal;* and further evidence of a colder climate will be given in the sequel of this paper.

The causes of a glacial climate may be divided into two general classes: astronomical and geographical. Since the sun is known to be an immense globe of fire, and almost certainly decreasing in temperature, at least radiating into space a constantly decreasing amount of heat, we might conclude that the sun, in former ages, would itself be the cause of a warmer climate, but no such cause can be assigned as the cause of the glacial climate, since our present climate is warmer than that which formerly existed. We must therefore seek other astronomical conditions which would be favorable to a colder climate.

Among the causes independent of the direct calorific power of the solar rays, which modify climates, we may mention the inclination of the earth's axis to the plane of its orbit. This arrangement in nature gives rise to summer and winter, spring and autumn, in the temperate zones. Such species of vegetation as are adapted by their nature to active life and growth in the warm season of the year, while in the cold season they are nearly or quite dormant, retaining only a potential vitality, would flourish in regions where the mean annual temperature is comparatively low, if the mean summer temperature,

[&]quot; No. LV., Art. II.

or the temperature of the growing season be sufficiently high for their development. Annual plants, whose seeds could be matured and remain uninjured through the winter, would also flourish in such climates. Any change which would diminish the inclination of the earth's axis, or increase the obliquity of the ecliptic, would correspondingly influence the geographical limits of such vegetation as has a periodical growth. A contrary change would produce a contrary effect.

Not only vegetable life but animal life also would be influenced by the same astronomical cause. Those animals which are confined, or nearly confined, to the spot where they live, must be adapted to the mean animal temperature of the element in which and where they live. Migratory animals, or such as go in polar directions during the warm season of the year, to find food, and probably for greater physical comfort, would extend their excursions to a considerable distance, perhaps, and occasionally they might be overtaken by sudden cold, and die in those regions where the mean annual temperament is much below that required for their continued existence. The remains of such animals would afterwards be found in the high latitudes where it might at first be concluded that the climate was once adapted to their existence.

The accumulation of ice and snow from year to year would be influenced by the same causes. That is, there would be a limit, where, as a rule, all the snow and ice that accumulated during the cold season would be melted away during the warm season. Beyond such a limit the snow and ice would gradually increase in quantity from year to year; and if the surface should slope towards the equatorial regions, glaciers, which would in this way be formed * would gradually move towards warmer latitudes. The diminution of the obiquity of the ecliptic would cause the mean annual temperature to decrease, †

^{*} N. Q. R., No. LV., Art. II.

[†] Meech, On the Relative Intensity of the Heat and Light of the Sun upon Different Latitudes of the Earth. Smithsonian Contributions to Knowledge, p. 37. According to Meech, 10,000 years ago the poles received 20 rays where they receive only 19 now. (p. 37.)

and thus the snow and ice of the arctic and the antarctic regions would be slowly extended towards the equatorail regions.

The obliquity of the ecliptic, owing to change in the position of the plane of the earth's orbit, is constantly diminishing at the average rate of about thirty-seven seconds of are in a century, and it has been diminishing for many centuries. It is decreasing at a constantly accelerated rate, being about forty-eight seconds a century at present, but eight thousand years ago it diminished at the rate of only thirteen seconds in a century.* According to Stockwell's investigations the obliquity of the ecliptic will always be confined within the limits 24° 35′ 58″, and 21° 58′ 36″, the whole variation amounting to 20° 37′ 22″. We may hence conclude that from this cause alone the change of climate could not be very considerable. So far as there has been a change, for several thousand years past the influence has been to gradually produce a colder climate north and south of about 50° of latitude.†

Another astronomical cause of change is the secular variation of the eccentricity of the earth's orbit. At present the earth is about three million miles nearer the sun about the first of January than it is about the first of July. There was a time when the earth's orbit was practically a circle; and also a time when the greatest distance of the earth from the sun exceeded the least distance by about thirteen million miles, or rather more than four times its present amount.

According to a law first given by Lambert in his *Pyrometry*, the amount of heat received by the earth from the sun, in any given time, is exactly proportional to the angle described by the earth in that time, or the longitude passed over in the interval, the elements of the orbit remaining the same during the time; but if the whole orbit be considered, and the eccentricity be supposed variable, the amount received is inversely proportional to the minor axis of the orbit. The researches

† Meech, p. 97.

^{*} Stockwell's Secular Variations of the Orbits of the Planets, p. 196. Smith Cont. to Knowledge.

of mathematicians in physical astronomy have proved that the major axis of the planetary orbits are subject to no changes but those of a periodical character.*

We therefore conclude that, since the minor axis (or eccentricity) of the earth's orbit is subject to a secular variation, the amount of heat received by the earth during a year is subject to a secular variation. At present the eccentricity of the earth's orbit is diminishing, and it has been diminishing for a great many centuries; that is, the minor axis of the orbit is increasing, and, according to the law above given, the annual amount of heat which the earth derives from the sun is gradually diminishing. Although the amount of heat which the earth yearly derives from the sun is at present less than it was when the eccentricity of the orbit was considerably greater, yet a combination of circumstances in times past may have caused an accumulation, so to speak, of cold in the same region of the earth during many ages, and in this way important changes might be produced. Thus, owing to the precession of the equinoxes, the revolution of the major axis of the earth's orbit, and the variation of the eccentricity of the earth's orbit, there was a time when the eccentricity was large, and the major axis passed through the solstices, and the consequence was that the summer of one hemisphere of the earth took place when the earth was farthest from the sun, and the winter when it was nearest. There would, therefore, be a long cool summer and short warm winter. At present we are having very nearly such a combination of causes, except the large eccentricity of the earth's orbit. Our summer in the northern hemisphere is about seven and three-fourths days longer than our winter, reckoning from equinox to equinox. There was a time at some period in the past when the eccentricity was at or near its maximum, and the major axis coincided with the solstices. When this occurred, the difference between the length of summer and winter in the two hemispheres was equal to thirty-two and a half days.† That these causes had

^{*} N. Q. R., No. LI., p. 78.

[†] Stockwell's Memoir, p. 13.

an influence on the climate in the two hemispheres of the earth in those ancient periods is quite certain, but just how, and to what extent, it is more difficult to decide.

According to Lambert's law before given, the amount of heat received by the earth from the sun is the same when the sun is north of the equinoctial line as when it is south; or, in other words, the greater time during which the sun is on one side just compensates for the nearer approach on the other. If we consider only one hemisphere of the earth, as for instance the northern, and suppose its summer to occur in that part of the orbit in which the sun is at its greatest distance, there would be a long cool summer, and a short warm winter; for, notwithstanding the longer time of exposure, the heat cannot accumulate to any great extent, since there is a correspondingly greater time for the heat to be radiated away. It is generally supposed that the glacial climate of a hemisphere occurred while the summer of that hemisphere happened in perihelion. There are several reasons, however, for concluding that the reverse was actually the case.

It has already been shown that, although glaciers may extend far below the snow-line, or the line of perpetual congelation, yet the source of glaciers is the snow that accumulates above that line.* Any cause that tends to lower the snowline will, as a general thing, increase the extent of glaciers and extend their influence. Now, other things being equal, the height of the snow-line is determined by the summer temperature, and not by the winter. A summer whose mean temperature is comparatively low would, therefore, cause the snow-line to descend; a succession of such summers would cause the glaciers to be extended, and the amount of the extension would depend on the coolness of the summer. If, therefore, the eccentricity of the earth's orbit were large, at the same time that the summer of either the northern or the southern hemisphere of the earth occured in aphelion, the snow-line would be lowered, and glaciers and glacio-aquean

^{*} N. Q. R., No. LV., Art. II.

action would be extended in that hemisphere. The temperature decreases about three degrees Fahr. for every thousand feet of elevation; so that a decrease in the mean summer temperature of three degrees would cause the snow-line to descend a thousand feet. We hence conclude that the temperature would not have to decrease very many degrees to send the glaciers down into those regions which are now entirely free from them.

But a decrease of temperature is not the only cause which lowers the snow-line, for the position of this line is determined both by the mean temperature and the amount of snow that falls. The height which gives a temperature of 32°, or that of freezing water in the hottest month, is not that of the snow-line. In most cases that of the former is considerably above that of the latter, but in others the latter is the higher. In the Andes, near Quito, the height of the snow-line is 15,795 feet, and the height of the line of 32° is 14,175 feet. In the Himalayas the snow-line on the south side descends 3,000 feet lower than on the north side.* These differences are to be explained by the amount of snow that falls. Those localities which are favorably situated for the condensation of aqueous vapor, and especially where the atmosphere is loaded with it, will necessarily have a considerable snow-fall. course it will require a greater amount of heat to melt a large body of snow than it will to melt a smaller amount.

The opposite hemisphere to that which we have been considering would have a long cold winter, but a short hot summer, which would be favorable to evaporation; and by a circulation of the atmosphere from one hemisphere to the other, the vapor thus raised in one hemisphere, during its summer, would be precipitated in the other one, during its winter. The principal difficulty here is to account philosophically for the circulation of the atmosphere from one hemisphere to the other. We have some facts which prove the existence of the circulation referred to. There is consider-

^{*} Somerville's Phys. Geog., p. 297.

ably more water in the southern hemisphere than in the northern, and we might suppose that more vapor would be precipitated in that hemisphere than in the northern, but such does not appear to be the case. According to theory, atmospheric circulation in one hemisphere takes place in a great measure independently of the circulationin the other hemisphere; still some portion of the atmosphere passes from one hemisphere to the other. So far as we are aware, the above theory of a glacial climate was first proposed by Joseph J. Murphy, F. G. S.*

The present relation of the line of apsides, or the major axis of the earth's orbit, to the solstitial points, is favorable to a glacial climate in the northern hemisphere (for, according to the above theory, only one hemisphere could have a glacial climate at one time), if the eccentricity of the orbit were large. We must, therefore, seek for a period when the eccentricity of the earth's orbit was large, and the other conditions were favorable to a cold summer climate in one hemisphere. The eccentricity has been computed by Mr. Stone and by Mr. Croll, by the aid of Leverrier's formula, and by Mr. Stockwell, by means of his own formula. According to these calculations, about 100,000 years ago there was a considerable eccentricity, so that the difference between the greatest and the least distance of the earth from the sun amounted to about 8,500,000 miles; and at about that period the major axis of the earth's orbit coincided with the solstices. At that period the cool summer was in the northern hemisphere. About 200,000 years ago there was a still larger eccentricity, causing the distance of the sun from the earth to vary as much as 10,000,000 miles, and the other conditions were the same. t We have now explained the astronomical conditions which are favorable to a glacial climate, and have indicated two periods in the past when there was probably a

^{*} Quart. Jour. Geol. Soc., xxv., p. 150, 1869.

See Lyell's Prin. Geology, vol. i., chap. xiii., eleventh edition.

[‡] Secular Var. of Planets' Orbits and Secular Equation of the Moon's Mean Motion, 1872 and 1867.

cool summer climate in the northern hemisphere. Notwithstanding these apparently favorable astronomical conditions, we are inclined to think that the principal cause of the glacial period must be sought in the earth itself—in the relative positions and extent of the land and water. We shall now briefly explain what these geographical conditions are. must premise, however, that both astronomical and geographical conditions must be taken into consideration in our attempt

to give a rational explanation of the glacial period.

The fact that geologists have not recognized more than one glacial period is a proof that astronomical conditions alone do not control the causes of a glacial climate. geographical distribution of land and water must, therefore, have much to do in modifying the heat and cold of a region The distribution of fossils in the earth's strata has revealed the fact, that, as a rule, what is now dry land was once the bed of the ocean, and what is now the bed of the ocean was once, very probably, dry land. Changes of this kind are now constantly going forward. In one part of the globe land is rising, in another it is subsiding; in one place land is worn away by the waves and currents of the ocean, and in another it is constantly being formed. These changes, though apparently slow, will ultimately so modify the forms and relative positions of the continents and the larger islands as to completely alter the geographical conformation of the surface features of our globe. The gradual rise of land at one period, and its subsidence at another, are wonderful phenomena in nature, and such as we cannot fully comprehend.

Owing to the position of the earth's axis with respect to the plane of its orbit, about forty-seven degrees of the equatorial parts of the globe—the torrid zone—have, during some part of the year, a vertical sun; and those parts bordering on this zone are also much heated in the summer season of those parts, and they do not become much cooled during the winter. The land of the torrid zone and the parts bordering on it absorb much heat, which it retains to a considerable degree, and warms the air in contact with it, and by the motions of the atmosphere this tropical heat is conveyed to other and distant regions of the globe. The greater heat of the equatorial regions causes the air to expand and rise up, and thus the heat is conserved and carried towards the polar regions, where the increased force of gravity condenses it and thus liberates the heat derived from the tropical regions.

The land is immobile and its heat must be conveyed by the atmosphere; the water, on the other hand, is itself mobile, and the warmth which the ocean between the tropics derives from the solar rays is carried by oceanic currents towards the polar regions, there to modify the climate of the temperate and polar zones, and convert a rigorous climate into a moderate one. Thus the Gulf stream, which is a warm oceanic current flowing from the Gulf of Mexico, in a north-easterly direction, so warms up the western and northern coasts of Europe as to produce a comparatively warm climate in those parts. We know, also, that the western coast of North America is rendered much warmer by oceanic currents than it would be without them; while the eastern coast is rendered colder by the cold northerly current which flows through Davis' Straits, and along the eastern shore of North America.

Suppose, now, on the other hand, that, instead of a large body of equatorial land, there was a large body of polar land, and let us add, at a considerable average height above the level of the sea. There would be no tropical sun to warm it up, but instead, the naturally intense cold of those regions would cause the land to part with its heat—whatever it might naturally possess or derive from the sun during the small portions of the year that it would be possible for it to do so—to such a degree that the snow-line would be carried a considerable distance toward the equator. The elevated land which we have supposed to exist in the polar regions, actually does exist there, only not in so large quantities as the glacial climate of the Tertiary period calls for. Such elevated land becomes a great reservoir of ice and snow, condenses the vapor contained in the atmosphere, and de-

prives it of its warmth, and communicates its cold to the

adjoining country.

Since we have supposed the equatorial lands to be much less in extent than at present, the space would be occupied by water, which does not become so highly heated as the land, since a large part of the heat derived from the sun is employed in converting a portion of the water into vapor. This vapor is carried by aerial currents towards the poles, and is condensed and falls in the form of rain or snow. This process liberates the latent heat of the vapor, and in this way the tropical heat is carried to temperate and colder latitudes. Moist tropical land, which would become much more heated than the ocean, would furnish vapor for the atmospheric currents to convey north and south, and thus such a geographical arrangement would be more favorable to a warm climate in polar latitudes, than a greater preponderance of equatorial Besides, the conformation of the land has much to do in directing the currents of the ocean. The warm equatorial waters are forced into the Gulf of Mexico, and the form of the coast and the island of Cuba give it a direction northward, and the rotation of the earth gives it an easterly course, and it is thus carried towards the continent of Europe. Without discussing this subject in its full extent, which would occupy much more space than we have to spare, it will be seen that the physical geography of the globe must have had much to do in causing the glacial period.

The influence of the glacial era on organic existence was no less marked than that on the surface features of the globe. The seas must have been gradually chilled as the glaciers descended towards the south in the northern hemisphere, and such marine animals as live in water of a mild temperature either died out or moved to warmer seas, and their place was taken by more northern species. The remains of arctic shell-fish are now found in Great Britain and in other parts of Europe, at present enjoying a mild climate. It is related that some years ago, Smith, an English geologist, went to London with a collection of shells, and laid them before

the proper authority on such matters in the British Museum, and asked him to pronounce on their value and import. "My dear sir." said the director, after a cursory examination of them, "you have been taken in by some whale fisher; these are muscles which have been picked up on the shores of the Arctic Ocean, but they are in bad condition, weatherworn, and in part broken to pieces, and are at best only fit to be thrown into the street." "I did not buy the shells," said Smith; "I collected them myself from a stratum of argillaceous earth on the banks of the Clyde, in Scotland, where they form an ancient sea-beach." These facts are of great value to the geologist, but they are less interesting to the general reader than such as pertain to the larger animals of an arctic character, which inhabited, during the glacial period, what are now regions having a mild climate; and such others as appear to have been overtaken by the intense cold, and destroyed by the rigors of the icy climate.

At the beginning of the post-tertiary or quaternary period in middle Europe, or perhaps before, the reindeer made its appearance there. Its remains are now found in great abundance in the caves and other sites where primitive man dwelt-for man was a contemporary of the reindeer and the mammoth in Europe;—but as the ice and snow gradually disappeared, and the climate became warmer, the reindeer moved northward, so as to continue in a climate more adapted to its nature. Besides the reindeer, there existed in Europe about that period the gigantic cat of the caves-either a lion or a tiger, and it is difficult to determine which—the cave hyena, the auroch, or the European bison, which is not yet entirely extinct; the great ox (Bos primigenius), which was widely extended over Europe; and the musk ox, and the horse.

Besides the animals to which we have referred, there existed both the rhinoceros and the elephant, species different from those living now. The tichorrhine (*Rhinoceros tichorrhinus*), or Siberian rhinoceros, was found in 1772, by Pallas, on the banks of the Wiljui, a tributary of the Lena, in Siberia, in latitude

64 degrees north. The cold in this region is very intense, and the carcass was very well preserved. It was taken from the sand, where it must have been frozen for many centuries; at least, it is the general opinion that such must have been the case. The soil in this region remains frozen throughout the year to a great depth, except a thin layer on the surface, which thaws during the warm season. Some putrid flesh yet remained, and part of the skin retained its covering, which consisted of short crisp wool with black and gray hairs. The animal was nearly twelve feet long. The eye-lids and eye-lashes had not entirely decayed. The horn was absent.

This individual was considerably different from existing species, especially in the form of the head. The hair was short on the face, and it was firmly fixed in the pores of the skin, where it grew in tufts. The black hair was larger and stiffer than the rest. The skin of the legs also retained some of its hair, which was from one to three-twelfths of an inch long, and much more abundant than is found on the living species.

The extinct rhinoceros was widely distributed over the northern hemisphere of the eastern continent. One horn has been found which was nearly three feet in length, and it must have been a formidable weapon when used by the wonderful power of its possessor. Professor Brandt, of St. Petersburg, was so fortunate as to extract from the cavities in the molar teeth of the animal, found by Pallas, "a small quantity of its half-chewed food, among which fragments of pine leaves, one-half of the seed of a polygonaceous plant, and very minute portions of wood with porous cells (or small fragments of coniferous wood) were still recognizable."†

The mammoth or fossil elephant has, perhaps, attracted as much attention, and given rise to as much discussion as any single animal which existed in post-tertiary times. This has grown out of the great size of the animal, and the former belief that it properly belonged to a warm element, and that

CLetter to A. Von Humboldt, 1846.

it could not live in a country so cold as Siberia now is. This huge animal ranged over a wide extent of territory in Europe, Asia, and America.

Some of the remains of the mammoth which were at first found were supposed to belong to giants from twenty to thirty feet high. When it became known that these fossil bones belonged to the elephants, it was at first thought that they were introduced into Europe by the hand of man. It was supposed that Hannibal carried them to France, and the Romans to Germany. Pallas first gave a systematic description of the mammoth; Dr. Blumenbach named it Elephas primigenius; and Dr. Falconer showed that it was different from three other species with which it had been confounded. The remains are found in great abundance in the basins of rivers which have become extinct, or along the margins of rivers which still discharge their waters into the sea.

In England and Wales the remains of the mammoth are a very common fossil. In Scotland, however, they are comparatively rare, which may be explained by the former existence of glaciers there. The remains have been found in Ireland, but they are not numerous. These islands must have been united to the mainland during the era of these large quadrupeds in Europe.

The fossil remains of the mammoth in Great Britain are found in various stages of decay, and in general the gelatine has disappeared. In a few cases, however, both in England and Scotland, the ivory of the tusks is sufficiently well preserved to be useful to the ivory turners. In Italy mammoth remains have been found in volcanic gravel beds, from which we learn that they inhabited that region when the volcanic vents there were yet active.

In Germany these fossils are very abundant. In 1816, near Constadt on the Necker, no less than thirteen tusks and several molar teeth were found heaped together. During the same year, at the village of Thiede, a few miles to the south of Brunswick, eleven tusks were found within a small space, one of them having the enormous length of fourteen and three quarters feet, and another eleven.

But the great storehouse of fossil ivory, and the other remains of the mammoth, is found in the northern part of Siberia. Its remains, however, in the northern and eastern part of European Russia, are very abundant, being buried in the auriferous gravels of the Ural mountains,* where it must have lived while these gravels were depositing.

In Siberia the ivory is so abundant, the tusks are so numerous, that we may speak of them as practically inexhaustible. The cold is so intense in that desolate region that the fossils have suffered but little decay. These tusks have been an article of trade to the Jakuti and the Tungusians from time immemorial. These facts teach us that the mammoth must have roamed over that region ages ago, in countless herds, and lived and died there, as we are nowable to show. That they may have gone there during the warm season of the year, as supposed by Lyell, in search of food—their home being farther south is possible, but that they all did, is not probable. As we advance towards the north, it is said that the remains are less large and heavy, but they increase in abundance. On the Lachon Islands the tusks are observed to be fresher and whiter than they are on the main land. A sand-bank on the western side of one of these islands, after a long continuance of easterly winds, which washed a great supply of bones on shore, seemed to be a great storehouse of the fossils.*

The history of the carcass of the mammoth, which was discovered in the latter part of the summer of 1799 is full of interest, as showing how these monsters sometimes died and were then preserved, perhaps for thousands of years. As to the length of time during which the carcasses of mammoths have been preserved in Siberia, we are generally disposed to regard it as very great, but on this subject we are quite poorly informed. The recent report that a live mammoth had actually been seen in the northern part of Siberia, although there may be no truth in the story, is quite likely to lead us

^{*}Geology of Russia in Europe, p. 492

[†] Wrangel's Siberia and Polar Sea. Trans. by Gen. Sabine. Introd. pp. 132, 133.

to think that that animal has not been extinct there so long as has generally been supposed. Some facts which we shall presently give will also tend to show that that northern and inhospitable region was, and may be still, the home of the mammoth. The prevailing opinion has been that several thousand years back Siberia possessed a warm climate, but some sudden catastrophe converted it into an arctic climate, and destroyed those large quadrupeds which were so unfortunate as to be traversing those regions at the time. Some such view as this was entertained by Baron Cuvier and Dr. Buckland. That Siberia once enjoyed a warmer climate seems to be certain, for birch trees are found buried in the sand north of the 75th parallel of latitude, and the first trees of the kind now existing are found three degrees farther south, and there they only attain the size of shrubs. The change of climate has probably been gradual, not sudden in any sense of the word; at any rate, we must not assume such sudden changes to have taken place, so long as we have no positive facts to substantiate such things.

That some particular locality may have been visited by sudden cold we may reasonably infer, since we now experience such changes in our warmer latitudes. A mammoth which had become mired—as it is certain that they often did—to such a depth in the mud that it could not extricate itself; or one which had broken through some frozen crust on which the animal had ventured, where the strength of it was not equal to the great weight of the beast, might thus be suddenly frozen in and afterwards overwhelmed by sand and water, and thus effectually buried beyond the reach of the short summers, for many ages.

A Tungusian fisherman who was in the habit of collecting tusks for sale, from among the blocks of ice and the rubbish which had fallen from the cliffs, discovered in the latter part of the summer of 1799, on the banks of Lake Oncoul, rear the mouth of the Lena river, a mass of unusual form, projecting from the cliff, and the nature of which he could not then determine. The next year being again at the same place, he

saw that the rather shapeless object was partly disengaged, presenting two projecting parts. When he visited the same locality again, near the end of the summer of 1801, he was not a little surprised to see that it presented one whole side of a huge animal having two large tusks, one of which projected from the ice. The summer of 1802 was too cold to produce any observable effect. The next year, however, was more favorable, and the ice so far thawed that the carcass tumbled to the base of the cliff and lodged on a bank of sand. In the month of March, 1804, the fisherman cut off the tusks, which he sold for fifty roubles. This might have been the end of this interesting specimen of natural history, had it not been for the industry of Mr. Adams, an employé of the Court of Russia, who traversed those desolate regions in 1806.*

Mr. Adams has left us a very interesting account of the history of this mammoth, only the substance of which we give. He found the mammoth still in the place where it had fallen, but much mutilated. The Jakuti of the neighborhood had cut off the flesh for their dogs; and, during a scarcity of provisions, wild animals, such as white bears, wolves and foxes, had also fed upon it. The flesh had in this way been nearly cleared from the bones, leaving a nearly perfect skeleton except one fore-leg. "The head was covered with a dry skin; one of the ears, well preserved, was furnished with a tuft of hairs." This immense mass was transported to St. Petersburg, 7,330 miles. The skeleton was put up in the Museum of Natural History in that city. The eyes were preserved and the pupil of one of them could be distinguished.

The animal was a male, and it had a long mane on its neck. The skin, of which three-fourths were preserved, was of a dark gray color, covered with reddish wool and black hairs. The carcass was nine feet four inches high, and sixteen feet four inches long, exclusive of the tusks, which measured nine and a half feet along the curve. The two tusks

^{*} Is it possible that this carcass was elevated with the land since the animal died?

together weighed three hundred and sixty pounds, and the head alone four hundred and fourteen. The hair consisted of two kinds, common hair and bristles. It was thick-set on the skin, and curly. Some of the bristles were eighteen inches long.

We learn from this specimen of the mammoth, so fortunately preserved, that those animals were well protected against the cold, and hence adapted to live in a cold climate. The food of this mammoth was probably twigs, and the foliage of trees that grew in that region, together with such softer kind of vegetation as it could find.

The discoveries made in 1843 by the distinguished Russian naturalist, Dr. Middendorf, are still more interesting in relation to their bearing on the climate of the mammoth period. One of these quadrupeds was found on the Tas, between the Obi and the Yenesei, in latitude 66° 30', or near the Arctic circle.* Some parts of the flesh were so well preserved that the ball of the eye is now preserved in the Museum of Moscow. Two other carcasses, one of which was that of a young individual of the same species, were also found in latitude 75° 15' north, near the Taimyr river, the flesh being much decayed. They were buried in strata of clay and sand, with erratic blocks, at a height of fifteen feet above the level of the sea. In the same place Dr. Middendorf saw the trunk of a larch-tree, which is the same kind of wood that is now carried down by the river to the Arctic Ocean. Marine shells of living northern species were also associated in the same deposit. These shells are characteristic of the glacial deposits in Scotland.†

In 1866 many skeletons of mammoths were found in the flat country near the mouths of the Yenesei, between the parallels of 70° and 75°. These skeletons retained the skin and hair. In 1869–70 Von Maydell made an exploring expedition, under the direction of the Academy of St. Petersburg, to the river Indigirka, to examine some remains reported to

Journal du Nord, 1807, St. Petersburg.

[†] Lyell's Prin. Geol., vol. i., p. 183.

have been discovered there. He found the skin, hair, and bones there, and in one place a perfect skull was dug up. But the most interesting discovery in that region was that made by Benkendorf, a Russian engineer, in 1846, during a survey of the coast off the Lena and the Indigirka. The iron steamer was directed up the latter river, which was much swollen by heavy rains. During that year there was unusually warm weather in Siberia. The rains in more southern latitudes caused the rivers which flow towards the north to pour immense quantities of this warmer water into the Arctic Ocean, and on its course it carried not only ice to the sea, but even large tracts of land, which the warm water thawed. After passing up the river some distance, which had abandoned the old channel for a new one, cut through the soil by the rush of waters, the engineer's attention was called to a shapeless mass which alternately rose and sank in the water. It was soon discovered to be a large mammoth with long tusks and trunk, the latter moved about by the running water. With ropes and chains it was secured, while its hind legs were yet fast in the frozen ground. In the course of twenty four hours it was loosened by the water, and by great exertions the immense carcass was drawn on shore and rolled twelve feet back.

This mammoth was well covered with thick fur. It was about thirteen feet in height, and fifteen in length. The tusks were eight feet long, and the trunk six. The legs were a foot and a half in diameter. The tail was naked except a tuft of hair on the end. The animal had been in good keeping, and death seemed to have overtaken it in the prime of life. Owing to the encroachments of the stream, they were obliged to work lively. The tusks were secured, and an effort made to cut off the head, but it was slow work. When the belly was cut open the intestines rolled out, causing a smell so dreadful that Benkendorf was obliged to turn away. He had the stomach carried to him and he examined its contents. They consisted of young shoots of fir and pine, and a quantity of young fir cones, chewed and mixed with the

"The giant was well protected against the cold," says "The whole appearance of the animal was Benkendorf. fearfully strange and wild. Its shape was different from that of our present elephant. As compared with the Indian elephant, its head was rough, the brain-case low and narrow, but the trunk and mouth were much larger. The teeth were very powerful. Our elephant is an awkward animal; but compared with this mammoth, it is like an Arabian steed compared to a coarse, ugly dray horse."* The rise of water carried away the carcass, before the examination was complete, and it must finally have reached the Arctic Ocean, where thousands of others have probably been buried. existence of the numerous bones on and around Lachon Islands, to which we have already referred, may be explained in this way, since they lie off the mouth of the Lena river.

The food which was contained in the stomach of this mammoth proves that it fed on the vegetation which grows now in the woods which border the low and desolate region where it was found. From this we conclude that the Siberian climate in that region was not very different then from what it is now. The animal must have mired and frozen in the spot where it was found; and being covered with frozen mud and sand, it was thus protected from the decomposing effect of the air and the water. A thorough exploration of the northern part of Siberia would probably entirely settle the question of the climate of the mammoth.

^{*}Siberische Reise. Bund iv. Enste Lieferung: Die Thierwelt Siberiens. By Dr. A. Von Middendorf, St. Petersburg, 1867.

ART. VI.—Catalogues and Circulars of Institutes, Military and Civil Academies, Seminaries, &c., &c.

Before we proceed to give our impressions of the schools, academies and institutes of the Hudson, comparing the good, bad and indifferent with each other, ex more nostro, we may be permitted to make an observation, or two, especially as it is a widely known phenomenon that those who are criticised are apt to regard themselves as "attacked," through some motive or other, more or less diabolical.

Nothing is more creditable to the American people than the generous liberality with which they encourage, in every possible manner, the great cause of education; nor is there any of their truly noble characteristics from which greater results may be expected. No country in the world can boast a more extensive system of free schools than ours; nowhere are the teachers of such schools more liberally remunerated; in a word, nowhere have the youth of all classes more ample opportunities of securing the benefits, at least of a good business education, "without money and without price." Yet, in what country do we find schools that are not free more munificently sustained? Neither in Prussia, in England, nor in France are higher prices paid for tuition at high schools or academies, male or female, than are cheerfully paid throughout the United States. Indeed there are but few of the highest educational institutions in those countries where education is most costly, and most exclusively confined to the wealthy, that receive so much for each student as some of our preparatory schools do.

For this laudable liberality alone, if for no other reason, our people should be protected from imposition on the part of pretended educators. In nearly all the German States, as well as in France, Denmark and Sweden, there are laws which prohibit any one from opening a school or seminary without undergoing an examination before a board constituted for that purpose as to his qualifications. If found qualified the candidate for the position of a teacher receives a license,

but in this license the grade of school which he is found capable of teaching is clearly defined; and he renders himself liable to prosecution as an impostor if he represents his school, in his announcements, as of any higher grade than that which his license declares him qualified to teach. In addition to these restrictions, the principal of a high school, seminary, or academy is required by law to admit the curé or rector of the parish, or any member of any of the learned professions, to the recitations of his classes, on pain of rendering himself liable to a new examination.

With us any one may set up as a teacher, call his institution a school, an institute, an academy, or even a college or university, and proclaim that he is capable of giving thorough instructions in all the branches of human knowledge. do we say that it ought to be otherwise, as in the European countries mentioned, for we hold that if the press did its duty there would be no need for any other laws than those embodied in its criticisms. There is no other sphere of human action in which the work of the critic is more needed or in which it is more legitimately performed. more, there is no sphere in which it does more good; and here we are reminded of the words of Menzel. "Criticism," says the most impartial and boldest of German critics, "will be itself most bitterly criticised. Whether it be just or unjust it always raises up enemies. Yet it is indispensable, and possesses great influence. It is a difficult but a noble calling."*

We had all these facts in view when, just fourteen years ago, we issued our first prospectus for this journal. In that prospectus we used the following language: "Education in every form, including art and science, will receive prominent and friendly attention; and whatever seems calculated to retard or vitiate it, whether under the name of a text-book, a painting, a seminary, a gallery, or a college, will be subjected to fearless, but fair and temperate, criticism." How well or ill we have kept this promise, our readers, and not we, are the best

^{*} Die deutsche Literatur. Stuttgard, vol. iv., p. 311.

judges. Suffice it for us to say, that we have done our best to fulfil it faithfully; nor have we had any reason to complain of the manner in which our efforts in that direction have been received by the more intelligent portion of the public. On the contrary, we have had every reason to feel thankful on that ground, while we could not but regard the feeling manifested toward us by our most eminent educators and thinkers as a source of congratulation and pride.

Hitherto, we have confined our criticisms on educational institutions almost exclusively to colleges and universities, male and female. Of these we have visited a large number, on the invitation or permission of their presidents or chancellors. In not more than two instances out of fifty have we been treated otherwise than in the most courteous manner; in not more than three instances has the slightest objection been made to our being present at the recitations. The heads of those institutions which confessedly occupy the highest rank, and which make the nearest approach to the most famous similar institutions of Europe, far from making any objection to our seeing their classes, have introduced us to them in person, courteously accompanying us from one lecture-room to Upon the other hand, the two or three institutions whose heads have pursued toward us a different course are well known to occupy, if not the lowest rank, at best a rank which is notoriously not high. Our readers may judge for themselves whether we are right or wrong when we say that the former institutions are Harvard, Yale, Columbia (N. Y.), the University of the City of New York, Georgetown College, and Manhattan College; the latter being Seton Hall College, Fordham College, and the University of Pennsylvania.

Nor have we had any different experience among the higher class of female institutions, certainly not excepting Vassar College. It is but just to remark here, in passing, that neither the President of the latter institution nor any of its professors, male or female, ever treated us otherwise than in the most curteous and kindest manner, and, if we criticised Vassar, it was not because it had not a good and faithful

corps of professors, but because those professors were interfered with and hampered in the performance of their duties by a "Board," composed of persons, who, without knowing anything of education above the merest smattering, affected to be its very fountain. But we understand that the Nathan Bishop incubus no longer exists at Vassar; and we are by no means surprised to learn that, since that gentleman has obtained leave of absence for an indefinite period from the councils of Vassar, the institution has very much improved in its efficiency and general character, and we can assure all interested in the subject that none were more sincerely pleased to hear of this improvement than we.

Our attention has often been called to the institutions on the Hudson which we have chosen as the subject of our present article. Many of our readers have requested our opinion of them in turn, from time to time; and in one or two instances we have tried to comply with their requests. Thus, for example, there are none acquainted with this journal who are not aware of our high estimate of Riverview Academy, Poughkeepsie; upon the other hand, there are none sufficiently long acquainted with it who are not aware that our estimate of Rockland Lake Female Institute, Nyack, is by no means high, although we have never spoken of the latter institution but once. Nor did we do more then than indulge in a quiet laugh, which we hoped, for the sake of the great cause, and for the credit of the educational profession, might produce a salutary effect on the reverend principal, for the benefit of the young ladies committed to his charge. Perhaps we should not have laughed in this instance; for we admit that, if there were any use in weeping, it would have been far more appropriate.

The reader may judge which was most natural and most called for when we mention one or two of the things we laughed at. We thought it was rather undignified and not very sensible, not to say vulgar, on the part of a clergyman, who claimed to be a great educator of young ladies, to occupy several pages of his catalogue with the "recommendations"

of some of the smallest village newspapers as proofs of his superiority above all rivals. We also thought there was something unbecoming, if not ridiculous, in calling the same building one name for a part of the year and another name for the remainder of the year; that is, we thought that the Rockland Lake Female Institute should have that title from one end of the year to the other, if it had any just claim to it, and not be newly christened every summer, and called the Tappan Sea House. Another thing we regarded as somewhat ludicrous was that, among the many surpassing advantages which he claimed his institution to possess, as a seat of learning for young ladies, was that of salt-water bathing, the Hudson being, it seemed, quite salty at Nyack, though only a little brackish much nearer the sea!

True, we expressed our fears that the teaching at Nyack was very much like the salt-water—that the former was quite as much diluted-not to say as much a fraud-as the latter. No doubt, this seemed unkind, but if it was, the unkindness did not originate with us, but with the students of the Institute and their parents. Many other complaints were made at the time, which we declined to notice. Thus, for example, we suppressed the allegation that, defective as the mental pabulum at Nyack was, the physical pabulum was still more so. In the same charitable spirit, we suppressed some of the similar compliments paid to the Rev. Delos Mansfield. Thus, for instance, we thought there might be some truth in the statement that that gentleman had proved himself much better qualified by nature and culture to preside at a boarding-house table than at the educator's desk-that he could wield the carving-knife much more dexterously than the pen, or any other educational instrument, except, perhaps, the Nyack saltwater.

But we abstained from making even the slightest allusion to any of these things. Our tenderness in this matter must have been well known to the Rev. Mr. Mansfield, but, instead of thanking us for it, he has never forgiven us from that day to this. Learning how bitterly he complained, we offered to go all the way to Nyack, and make the most ample amends in our power for any mistakes we might have been led into, on finding from personal observation that they were mistakes. The Rev. Mr. Mansfield affected to regard this as a very fair proposition, and wrote a polite letter, inviting us to visit the Institute, telling us what train to take, and informing us that he would have a carriage waiting for us at the depot. this appeared straightforward, courteous, and brave; but the letter closed with the piece of information that the writer was only just recovering from a long and severe illness, and that, on account of this illness, it could not be expected that the present condition of the Institute would be a fair criterion of its high general character as a first-class school. As we could not help regarding this as a miserere, we immediately wrote back that we could not think of disturbing the gentleman in such delicate circumstances, and, therefore, that he need not have any carriage or other vehicle waiting for us at the depot or elsewhere.

Some two or three years have since elapsed. In the mean time the grumblings against both kinds of pabulum furnished by the Rockland Lake Female Institute have become more and more loud and indignant. At the beginning of last month we resolved to visit as many of the Hudson River institutions as had no objection to our doing so, in order that we might be able to answer, from personal observation, at least a portion of the inquiries made of us. We wrote a note to Mr. Mansfield. remarking that we presumed it was needless to trouble him again to inquire as to his willingness that we should visit his institution, seeing that he had so cordially invited us on the occasion alluded to above. We mentioned to him at the same time that we did not contemplate visiting Rockland Lake Institute alone, but every other institute, academy and seminary on the Hudson that claimed to be a seat of learning for either sex, or for both sexes, and that would be willing to allow us that privilege, adding that our object was to prepare an article for our next number in which we could give our impressions in brief of each.

But whether it was that the fable of the Boys and the Frogs occurred to the Rev. Mr. Mansfield just then, or that the peculiar dialects which he pretends to teach as Greek, Latin, etc., would no more stand the test of critical observation than the salt water of the Tappan Sea, and that it might take many such "first rate notices" and "testimonials" as those of the "Cayuga Chief" and other similar village luminaries to prove their genuineness, he adopted the adage, that prudence is the better part of valor. and wrote to us "very respectfully," that he had changed his Such members of the press as write and publish eulogies at fifty cents a line may visit Rockland Lake Female Institute whenever they like, but that institution is closed to all who are even suspected of being critically inclined. We do not pretend to think, however, that there is anything strange in this. Those in the habit of counterfeiting the current coin of the commonwealth have naturally an objection to be detected and exposed.

It is but justice to the many other educational institutions on the Hudson to say that whatever their faults may be in other particulars, not one of their principals or presidents has offered the slightest objection to our visiting their class rooms. Nay, several of them had invited us voluntarily to do so more than once. True, only those of the first class-those conscious at once of their qualifications, abilities and integrity, have been thus liberal, and willing that their work should be witnessed even by reviewers; we mean such well-established, efficient, thorough, successful schools as the Riverview Academy, Poughkeepsie; the Poughkeepsie Female Academy, the Fort Edward Collegiate Institute, and the Mount Pleasant Academy, Sing Sing. We shall have a word to say of each of these as we proceed, for we have visited each, and been cordially permitted to see and judge for ourselves. We visited about a dozen altogether during the month of February. Nor did we visit two any one day, save in one instance, so that we may truly say we have spared neither time, nor expense, nor trouble in our efforts to obtain such information as would enable us to reply more or less definitely to certain questions proposed to us from time to time. In most instances we have been invited to dine. In some instances we have accepted those invitations, but in every case in which we could say nothing good of the institution we have paid the principal or president thereof one dollar for the dinner. And if it be borne in mind that in proportion as the teaching was meagre and otherwise defective, the table was so, we think we shall be believed when we say that in every instance in which we paid our dollar, the learned head of the institution had a clear profit by our visit of seventy-five cents; for although our appetite is generally pretty good, and is somewhat improved by our excursions through the country in pursuit of knowledge, we have a horror of the trichina spiralis which renders us as much averse to pork as the most orthodox of our Hebrew fellow citizens. However, we must not anticipate events, but consider them in their natural order as they occur.

The remarkable success of Prof. Bisbee, who, in establishing the Riverview Academy, at Poughkeepsie, combined military drill with the other excellent features of his system of education, caused quite a host of imitators to spring up on the banks of the Hudson and elsewhere; but the imitations in general are far too suggestive of those of the monkey trying to imitate the actions of men. With one or two exceptions those who have decorated their schools in almost every village along the Hudson with the high sounding title of "Military Institute" have lost sight of the fact that Prof. Bisbee has always held his military organization, excellent as it undoubtedly is. subordinate to his higher English course, embracing physics, mathematics, history, logic, etc., as well as to his classical course, and course in modern languages. They forget that there are few better Grecians or Latinists at the head either of academies or institutes in this country than Bisbee; and that there are none anywhere who know better how to appreciate the value of knowledge, or who possess in a higher degree the faculty of impressing his own views on the minds of his students. During a delightful drive which we enjoyed with him in his carriage on the occasion of our recent visit to Riverview Academy, his observations on the Latin gerund and gerundive, and on the Greek participles, as compared to the English, while the ladies who accompanied us chatted between themselves on other topics, was to us a veritable treat. And much as we were absorbed between our admiration of the picturesque and beautiful environs of Poughkeepsie, the unaffected, genuine classical lore of the professor, and the animated conversation of the ladies, we were forcibly reminded of Duclos' high but just estimate of instruction and knowledge: "L'enseignement est une riche mine qui donne pour produit de l'argent, de l'influence, et du pouvoir." That this is no exaggerated estimate on the part of the philosopher is well illustrated by the results attained by Prof. Bisbee himself. The struc ture which he has built with his own money-the proceeds of his indefatigable, faithful educational labors for nearly half a life-time—is at once a proof and a monument of his success. It is so well described with its surroundings in the last catalogue of the Academy, of which we have a copy before us, that we make no apology for extracting the following passage, only premising that we can bear testimony to its fidelity both to art and nature:

"The building is a large brick structure, occupying an elevation on the east bank of the Hudson river, and very distinctly seen from the passing cars and boats. It embraces many conveniences adapted to the wants of a first-class boarding-school, such as are not found in most other similar institutions. It is most thoroughly ventilated, and heated by steam throughout; water is accessible on every floor, and the room of each pupil is as pleasant as it could be at home. The views are delightful in every direction, and the place is pre-eminently healthy.

The river with its numerous attractions, lies below, stretching many miles in sight. The Highlands rise into prominence on the south, while to the north, forty miles away, is distinctly seen the Catskill Mountain House. Eastward, the city of Poughkeepsie lies mostly in view, and in the immediate vicinity is the most cultivated portion, adorned with park and fountain. Opportunities for bathing, rowing and skating are ample. The extent of the play-grounds allow, also, the recreation of the ordinary games and sports of school-boys.

Without waiting at this moment to give our impressions of one or two other Poughkeepsie institutions which it has been our privilege to visit during our recent tour, we proceed to take a glance at some of the imitators of Prof. Bisbee already alluded to. But we shall not fail to return to the "City of Schools," if only to do ourselves the pleasure of saying a word or two of what we saw and heard at that really excellent institution known as Poughkeepsie Female Academy—an institution which—as will be seen in due time—presents a contrast, in every essential characteristic, to the Female Institute referred to in a preceding page as advertising the salt-water of the Hudson and certain other, things of kindred genuineness and worth!

It is a curious fact that, of all the schools on the Hudson called Military Institutes, none give more prominence to the "military" element than those whose principals or presidents prefix "Rev." to their names. Another fact which some may consider curious is, that the greater this prominence is, the more the "military organization" is a downright burlesque! But such has certainly been our experience: not indeed, but there is far too much of the ridiculous in all the "military institutes" we have visited, with the two exceptions already alluded to, namely, Riverview Academy, and Mount Pleasant Academy, Sing Sing. The term "military" formed a part of the title of the former for some time after the war, but the principal, becoming disgusted with the ludicrous affectation and charlatanism of his imitators, omitted the pompous term from the title, but continued the military drill, in as much perfection as ever. The same judicious, sensible course has been pursued by the principal of the Mount Pleasant Academy—an institution whose thoroughness and efficiency really surprised us, and of which we shall have more to say before we close. We trust we need hardly remark that, in speaking of the reverend heads of "military" institutes, we do not mean to disparage the clerical educators of the Hudson in general. Any such attempt would be a great injustice, and could only recoil on those making it; for the truth is that nowhere have we met clergymen engaged in the great work of teaching who, in our opinion, are better qualified for their positions, or more earnestly intent on performing their duties faithfully and efficiently. In illustration of this, we need only mention two names—Rev. Joseph E. King, of Fort Edward Collegiate Institute, and Rev. D. G. Wright, of Poughkeepsie Female Academy—of whose indefatigable labors and their fruits we shall have a word to say further on.

We make no pretensions to infallibility in our opinions, but we cannot help thinking that they are not the right sort of clergymen who make such a display of their "military" proclivities. We have always regarded military priests and "priests and fanes that lie" as very much alike. The student of Greek poetry, acquainted with the few fragments of Menander which have reached our time, is aware that even among the Pagans military priests were compared to crowing hens. And certainly our recent experience has not been of a character to satisfy us that the old poet was altogether wrong in his comparison.

The first of these great seats of learning we visited is that entitled, "The Jackson Institute: a Military Boarding School," Tarrytown, N. Y., the principal of which is the "Rev. F. J. Jackson, A. M." Mr. Jackson is, indeed, a very bland, polite individual. So overflowing is his hospitality that, as a condition of our being allowed the privilege of seeing some of his classes, he insisted on our dining with him at the great military table. Fat, fresh pork being the only dish of animal food, we confess we felt a little timid; but so pious and fervent was the prayer offered up by the Rev. Mr. Jackson, before commencing operations with the carving knife, that we thought we should be safe in taking a small morsel; and so the event proved, for we experienced no disagreeable result. But we were sorry to learn, a few days afterwards, that the "cadets" were not so fortunate; that having been allowed more than double allowance of pork, on account of the presence of a stranger, their sensations during the next four and twenty hours were by no means pleasant. However, not a word of this would have been mentioned here, or elsewhere, by us, did we

not find the mental pabulum of the Jackson Military Institute still more objectionable, if possible, than its physical pabulum. Had it not been for this, we would never have quoted in reference to the matter, as we do now, the very expressive and apropriate, though brief words of Cicero, Non sus Minervam. Nay, it is more than probable that a sentiment of pity would have constrained us to pass over the whole affair, had we not found that, if the reverend principal has not shown ability and skill as a teacher in either his military, civil, or religious capacity, he is quite an adept in making representations which prove in due time to be entirely wanting in the element of truth.

Nor do we allude now to his accusations against his "military" rivals—such accusations, for example, as one he makes against the Rev. Mr. Flack, of Claverack, which runs thus: Brother Flack, who is also at the head of a great military organization, attempted to rob brother Jackson of a large number of his "cadets," by causing one of his emissaries to assure all the privates that they would at once be made commissioned officers, at Claverack, and that those who were officers already, at the Jackson Institute, would be promoted at least one step the moment they reported themselves to the adjutant-general at Claverack College and Hudson River Institute. This was the first circumstance which excited our suspicion as to the credibility of the Rev. Mr. Jackson's statements; for we confess we did not believe that his "military organization" had rendered Brother Flack quite so demoralized as that; nor have we learned anything since that has caused us to change our opinion in that respect, although Claverack is one of the institutions we visited during our recent excursions, and is also one of those which did not excite our admiration to any great extent.

The Rev. Mr. Jackson has a class in mathematics, and another in Latin, in the Jackson Military Institute; and it is but justice to him to say that he invited us to question each. But we like to propose questions only when we think there is some probability that at least a portion of them can be

answered; accordingly we respectfully declined in both these instances, for the poor "cadets" were sufficiently puzzled by their teachers—by the simplest propositions in mathematics, and the easiest words in Latin—without our puzzling them any further. Now we think the intelligent, thoughtful reader may judge for himself whether we were right or wrong, on having taken a survey of the whole ground, in declining to accept a dinner, even such as it was, at such an institute, without paying a liberal price for it.

The transition from the Jackson Military Institute, Tarrytown, to the Mount Pleasant Academy, Sing Sing, is to us a most agreeable one, and we have no doubt that it will prove equally so to our readers. Indeed, a sufficiently striking difference between the two institutions is shown by their catalogues, both of which lie before us. In one there is not a thought or an idea save what relates to money, together with the "testimonials" usually found in such inanities; in short, a more meagre, barren pamphlet has never found its way to our table, not excepting the catalogue of an auctioneer who wants to make the most of a few sets of dingy, moth-eaten furniture; The other catalogue, on the contrary, fully and ably discusses the subject of education, and sets forth the objects and aims of the principal in modest and sensible, but broad and satisfactory language. This the reader will be able to see for himself from an extract or two. First, the local position of the Mount Pleasant Academy is briefly described thus:

"The location of the school, at the widest point of the Hudson, and a few miles south of the mountain ridge of the Highlands, combines all that can be desired in healthfulness and accessibility, as well as in beauty of natural scenery; while the pure air of an elevated and broken region gives tone and vigor to the system."

On the next page we read, most approvingly:

"In addressing ourselves to the great work of Education, we have endeavored to keep distinctly in view the fact that boys have bodies as well as minds; hearts as well as intellects; and that any system in which either of these is neglected, must, of necessity, and to that degree, be defective. It has, therefore, been our object to provide not

only for their intellectual training, but also to consider our pupils as social beings, requiring moral training, and with a physical organization through which the intellectual and moral attributes are to have life and strength."

As our space is rapidly diminishing, we must necessarily be brief in our extracts. We must, however, make room for another paragraph, or two, from the Mount Pleasant Catalogue. Some of those who give their schools the most pompous names would do well to ponder on the suggestions contained in the following:—

"No one expects to plant the tree and gather the fruit at the same time, or to sow the seed in the morning, and reap the ripened grain in the evening. And yet there are those who, after ten or fifteen years of unchecked indulgence, with every habit of negligence and mental confusion fully established in their children, expect the teacher in a few months, with a power of transmutation surpassing all the arts of the alchemist, to change the dross to gold, rudeness to refinement, the undisciplined mind into the cultivated intellect. To such we would say, habits, and especially good habits, are of slow growth. We have here no forcing process, and no fellowship with those who advocate it; and we make no promise to realize such expectations. But to the work of sound training when time and opportunity are given, and a strict conformity to the conditions of the school is observed, we have no hesitation in pledging ourselves and the gentlemen associated with us.

"Believing that there can be no great attainments without corresponding exertions, and disclaiming all skill in those easy methods that affect to make the acquisition of knowledge only a pastime, we cannot promise to our pupils any advance in the great walks of learning that is not won chiefly by their own diligence and zeal. What we can and do promise is, by every means in our power to induce and encourage, and aid in their efforts—to foster and strengthen those habits of accuracy, perseverance, and self-reliance, that give the only sure promise of success in life. Our object is not to 'produce learned boys, but to subject boys to that discipline and training that may fit them to become learned, able and Christian men.'"

It is needless to commend these remarks; they commend themselves to every intelligent parent by their practical good sense. Prof. J. Howe Allen, their author and the principal of the Academy, is a graduate of Middlebury College, a gentleman of fine culture and a very excellent, though modest, unpretending educator. We have seen sufficient during our visit to satisfy us on these points. Mr. Allen introduced us to every class we had any wish to see; so that we were present at recitations both in ancient and modern languages, as well as in mathematics and other English branches, including the grammar of the good old vernacular, which none appreciate for its vigor and energy more than we. We beg leave, in passing, to express the hope that no head of an educational institution which we may have the privilege of visiting will regard us as guilty of the affectation of pretending to be above taking an interest in the English grammar recitations. Nor are we indifferent to those in arithmetic, even down to the simplest vulgar fractions. There is not one of these studies which has not its own peculiar charm for us; and yet we confess that of all the classes we saw at Mount Pleasant, none pleased us so well as that in Virgil. The students gave renderings of passages in the third book of the Eneid which were superior, in our opinion, to those given by the students of several colleges we have visited. The natural sciences are also taught by competent instructors, and carefully studied at Mount Pleasant, with the aid of appropriate apparatus and instruments. Nor should we forget the library, which, by the polite invitation of Mr. Allen, we had an opportunity of finding well stored with select works, numbering about two thousand volumes. To this we think we need hardly add, that even the exemplary Riverview Academy may regard the Mount Pleasant Academy as a worthy rival.

We sincerely wish we could speak in similar terms, excathedra, of "The Peekskill Military Academy." As a private individual we have, indeed, been as complimentary as possible to the genius who presides at that institution. That our compliments were somewhat ironical we confess, but they were not the less acceptable on that account, for they were by no means understood as such. Thus, for example, we took the liberty of suggesting in the gravest tone we could assume, that such enormous intellectual activity as that of the head-master and adjutant-general was fraught with danger to his nobler part. The dinner, too, which he insisted on our participating

of, exactly as the Rev. General Jackson had done, we designated to him as "excellent;" and in proof of our sincerity, we presented him a dollar bill, which he seemed to grasp with as much avidity as was evinced by Romeo's apothecary when that unhappy individual was handed the price of his "mortal drug." But when we address our readers, who have a right to expect criticism, and not laudation where criticism is merited, that is a different matter: we then find we have a duty to perform, and, however unpleasant it may be, we cannot shrink from it, fully accepting as we do the precept of Publius Syrus,

"Judex damnatur, cum nocens absolvitur."

We can truly say that no comedy we have ever seen performed afforded us more amusement than we enjoyed during the several hours which we witnessed the performances of "Colonel Charles J. Wright, A.M., Principal, of the Peekskill Military Academy." The exhibition was a veritable comedy of errors, interspersed here and there with scenes of the broadest farce. We only wish we had time and space to describe some of these scenes, and yet if we had they would seem to most of our readers as too incredible for belief. For the first hour we could hardly believe our own eyes and ears, for we had innocently supposed that the boarding schools, civil and military, which we used to read of in satirical novels of the last century, had passed out of existence. It is, however, but justice to the learned colonel to say that we saw him give lessons on that memorable day, in English grammar, arithmetic, geometry, book-keeping, trigonometry, drawing, ethics, military drill, etc., etc.; but such "lessons" we hope we shall never see again in any academy or school, whether military or civil! The "cadets" too seemed to enjoy the fun, for they managed to keep the institution in a constant uproar.

13.

The Catalogue, or Circular, is just what we might expect from such a source. Under the imposing heading, in large fancy type, "The Peekskill Military Academy," we have, at page 5, the commencement of a sort of autobiography of the "associate principals." From this we learn that the colonel is a graduate of Hobart College, wherever and what-

ever that institution may be; that he was principal of a Classical Institute at Milton (Pa.), etc., etc. Such was his great success in Pennsylvania that he excited the jealousy and envy of the whole teaching fraternity! Being of a benevolent disposition, this grieved him much, and accordingly we hear of him next at that famous seat of learning known the world over as "Yonkers Military Institute," where he occupied the commanding and important position of drill-sergeant, or sergeant-major. As some of our readers may be ignorant of the high character of the Yonkers Military Institute (for we are ashamed to say we were in that ignorant condition ourselves until very recently), we may remark parenthetically, that its students, military and non-military, form a total of nearly a whole score, whom some are unmannerly enough to call "urchins." All in the habit of reading the newspapers may see that the head master of the Yonkers Military Institute makes two important announcements daily-one is, that little boys are admitted to all the privileges of the institution; the other, that Greek and Latin are free within its classic halls; although the head master illustrates his superior system of teaching by informing all whom it may concern that in the phrase, "a very large assembly," "very" is an adjective qualifying "assembly," and not an adverb qualifying "large!"

It is easy to understand that a man of genius could not long occupy even the position of a drill-sergeant in a school of this high grade without finding his fame extended. Accordingly it soon found its way to Peekskill, or perhaps it would be more correct to say that the colonel occasionally carried it thither himself, after school hours. Be this as it may, he was duly installed there about a year ago. By way of evincing his gratitude to the ten trustees, he affixes "Esq." to the name of each in the catalogue before us, except one, who is regarded as sufficiently honored by the affix "Jr." Three of the ten are reproduced as "Officers of the Board," and are each duly decorated again on the same page with "Esq."

This is all very well for the trustees of the Peekskill Military Academy, but there is no mark of gratitude for the head master of the Yonkers Military Institute. On the contrary both master and institution are run down to the lowest grade by the gallant and learned colonel.

Every science and art receives "special attention" at the Peekskill Military Academy, according to the brochure before us. We cannot say that we wonder at the following announcement, but, in fact, rather think it appropriate:

" Special attention will be given to teaching English to Spanish, Japanese, and other foreign students." (p. 9.)

No doubt the sort of English taught by the colonel would be very good for "Spanish, Japanese, and other foreigners." Speaking of the great virtues of infantry and artillery "tactics," the catalogue proceeds—

"This secures a due share of healthful exercise to all, including those who, otherwise, would scarcely exercise at all. It cultivates an erect carriage, and a manly, respectful and gentlemanly bearing. It checks an inclination to boisterous conduct, etc." (pp. 9, 10.)

This would show by itself what an excellent teacher of English grammar the colonel must be; and we have already seen how effectual artillery tactics are in cheeking "an inclination to boisterous conduct." (!) Among the more important regulations of the Peeksville Military Academy are the following: "All pantaloons to be worn with suspenders" (!) (p. 11); "No food should be sent to students, except ripe fruit in its season" (p. 15). Be it remembered that even ripe fruit is not to be sent when it is not in season! As for pork, goat, etc., the "cadets" need no increase of those articles, and should a different class of viands be sent, there would be danger of a mutiny, for this is precisely one of those instances in which ignorance is bliss.

But it is time to return to the "City of Schools." No one competent to form an intelligent opinion can pass even hurriedly through the class rooms of the Poughkeepsie Female Academy, listening a few minutes to one recitation and a few minutes to another, without feeling that he is in an atmosphere of superior culture. This has certainly been our experience.

Nor is it any mere compliment to the sex on our part, to say that in no preparatory school, male or female, which it has been our privilege to visit, in Europe or America, have we seen Virgil better translated than by the young ladies of this institution under the tuition of Miss G. E. Havden. We indulge in no exaggeration, and do no injustice to male students or male professors, when we assure our readers that we have visited several colleges whose renderings of the Æneid were far inferior to what we witnessed on this occasion at the Academy under consideration. After the young ladies had translated quite a long passage in the third book, their accomplished instructor asked us to propose them some questions; and they seemed to understand the spirit of the author so well, that we readily allowed ourselves to be induced to do so. Nor were we in the least mistaken in coming to the conclusion, from what we had witnessed, that no confusion or other unpleasantness would arise from our asking such questions as the recitations happened to suggest to us, for not in a single instance did Miss Hayden's pupils fail to give an intelligent, satisfactory answer. But, although the Rector is himself a Grecian, as well as a Latinist, and takes pleasure in teaching the languages of Plato and Cicero, he by no means neglects the vernacular tongue, or what may be regarded as the lighter accomplishments. This will be sufficiently understood from the following extract from the Rev. Mr. Wright's Catalogue:

"An accomplished English education—as it is of the first importance—is here given the preference. But when pupils are sufficiently advanced to justify the hope that they may be benefited by a knowledge of ancient or modern languages, they are urged to enrich their minds with the treasures of the Latin and Greek tongues, and also, the German and French. The latter is in charge of a French gentleman of rare accomplishments and many years' experience, who not only devotes the most of his time to pupils in the class room, but meets them daily at table and in social intercourse; thus enabling the Academy to offer facilities for acquaintance with the language not surpassed and seldom equalled in American schools. German is taught by a gentleman who for several years held a professorship in one of the first universities of his native land."

In a word, the Rev. Mr. Wright's Academy ranks with

the best female institutions we have seen anywhere in all the characteristics which combine the useful and the ornamental; nay, in short, which make students perfect ladies, without allowing them to forget that they belong to the gentler and more retiring sex, and that as such they owe duties to society which they can not evade with impunity to their honor and good name.

The Brooks Seminary for young ladies, at Poughkeepsie, is also a very respectable institution; but it must be admitted that it lacks the thoroughness and other higher characteristics of the Poughkeepsie Female Academy. At the former as well as at the latter we have been afforded an opportunity of hearing some of the recitations. We heard one in Latinthat of quite a large class-but although the teacher (Miss Harriet McComb) proved herself entirely competent for her position, and the young ladies acquitted themselves creditably for the opportunities and experience they had had, yet the whole performance was very different from what we had witnessed at Rev. Mr. Wright's school. It was more than the difference between translating one of the simplest of Æsop's fables—that of the Hawk and the Doves—(Accipiter et Columbae) and some of the most difficult passages in the Æneid. Academy ladies were much more at home in the latter than the Seminary ladies were in the former, and a corresponding difference in favor of the Academy was clearly observable in the evidences of general culture. Judging from its Catalogue, Brooks Seminary has no higher aim than to be regarded as a preparatory school for Vassar College; in other words it is only ambitious to be a small satellite. The evidence of this pervades every page of that pamphlet. Indeed, the "mutual admiration" plan is carried to a fulsome extent in the catalogue. We do not know who is to blame for this, if any one is, further than that we read on the title page, after the name of the institution, "Edward White, Proprietor," and at the head of "Instructors," "Mrs. Mary B. Johnson White, Principal." In this case the proprietor and principal are different, although probably "the twain are one flesh." But, be this as it may,

Brooks Seminary is, as we have said, a respectable school—quite as much superior to the Rockland Lake Female Institute, as it is inferior to the Poughkeepsie Female Academy.

Cottage Hill Seminary, Poughkeepsie, has not yet had sufficient time, under its present auspices, to establish a definite reputation, the old Cottage Hill having, we are informed, run off to Tarrytown! The Rev. Mr. Ryder became disgusted with the "City of Schools." He thought the atmosphere of Tarrytown would be much more congenial, and we think he was right, if only because it is there that other eminent divine, Rev. F. J. Jackson, holds forth, as head of the great Military Institute which so proudly bears his name. Then be it remembered that, Nyack, famous for its Female Institute and its Tappan Sea House, is right opposite to Tarrytown, with its Rev. Delos Mansfield, head of that Protean Paradise

"Lying N. N. E. of the land of sense,
And seldom blessed with a glimmer thence.
But they want it not in that happy place,
Where a light of its own gilds every face;
Or, if some wear a shadowy brow,
"Tis the wish to look wise, not knowing how,"

It is not often that three such educators and divines as Mansfield, Jackson and Rider, have their institutions so near each other. One, be it remembered, offers to his pupils the benefit of the salt-water of the Hudson! and why should not the other twain avail themselves of the same? since none can pretend but the Tarrytown side of the river has just as much of the saline element in it as the Nyack side. Diogenes, the Cynic, used to ascribe to salt-water two wonderful properties—one was that of producing a complete and permanent cure in cases of hypocrisy, imposture, false pretences, etc.; the other that of destroying the trichina spiralis, in hogs and other unclean animals sometimes used for food. Who knows but it possesses those properties at the present day if rightly used? And if so we need hardly suggest what a series of blessings it may ultimately produce! At all events,

it seems that Cottage Hill Seminary is something that may be removed about from place to place, like the gates of Somnauth among the Hindoos, as "the pressure from without" becomes more or less urgent; and yet the Rev. Mr. Rider is brimful of indignation against Mr. Wetsell, because the latter gentleman has presumed to retain the old name of the Poughkeepsie institution. In our opinion this was, indeed, wrong; for the prestige left behind, when the memorable transmigration took place, was, to speak in the mildest terms, of doubtful value.

But there is one other great school at Tarrytown, which claims a passing word—we mean the "Irving Institute." Alas! for the honor this confers on the memory of the most elegant and most fascinating of American authors. True, for aught we know, the Irving Institute may have been once a school of a high order; for its present head master is such chiefly, if not exclusively in virtue of his having married the daughter of the former head master; although it is but fair to add that, before this alliance took place, Mr. Armagnac was a teacher in Pennsylvania, and his fame as such was second, in that region, only to that of the present gallant and learned head master of the Peekskill Military Academy. Mr. Armagnac is professor of "Natural Science, with Experimental Lectures, Latin and Greek," in his own institution. We have witnessed some of his performances in several of these branches of learning, and we readily acknowledge that most of them struck us as unique in their way. Indeed, we have never heard at any school or seminary such another lesson in French history in the English language, as his. In order to show his learning, he would have the names of all Frenchmen, French women, French cities, etc., occurring in the lesson, pronounced in French—such French as Puck is said to have spoken to the Institute—

> "As puzzled those learned Thebans much To know if 'twas Sanscrit, or High-Dutch."

Need we remark to any intelligent person that there is no more silly or more ridiculous affectation than to read or speak English in this Frenchified style? If we should pronounce

French names, in reading or speaking English, as the French themselves pronounce them in using their native dialect, there is no reason why we should not observe the same courtesy toward the Germans, the Russians, the Turks, etc. Do any of these nationalities consider themselves bound to pronounce our proper names as we do ourselves? Yet Mr. Armagnac's half English, half French, lesson to his students was net onetenth so amusing to us as his lesson in translating one of the easiest passages in Cæsar. In not a single instance was the Latin verb correctly rendered by the students, and in not a single instance did the principal of "The Irving Institute, a Classical and Commercial Boarding School," venture to cor-Yet let the reader turn to Mr. Armagnac's rect them! Catalogue and observe the lofty tone that gentleman assumes. We only wish we had time and space for a few specimens; as it is, we can only give a small morsel. Speaking of the highly refining "family influence" at the Irving Institute, Prof. Armagnae, A.M., says:

"There is no attempt to restrain mutual intercourse at the table or in the drawing-room, as becomes necessary in ordinary boarding-schools." (p. 6.)

We now turn to the north again, following the noble Hudson almost to its source. It is certainly through no lack of appreciation of the merits of Fort Edward Collegiate Institute that we have merely alluded to it thus far. If we have nearly reached the conclusion of our discursive article before attempting to give any account of our visit to it, or any definite estimate of its character, it is only because we wish to bring our excursions to as agreeable a close as possible. We never had visited Fort Edward before, and never had seen the Rev. Dr. King. We had, indeed, often heard both of the Institute and its head, and, except in one instance,* we had never heard

^{*} And in this one instance our informant was no other than the gallant and learned colonel who so ably guides the destinies of Peckskill Military Academy. According to this great educator a thousand things were wrong at Fort Edward; so that some of the good people of that village who have more perception than their neighbors, found it necessary

either spoken of otherwise than in the language of esteem and approbation. Yet, of all the institutions we have recently visited, none have so much surprised us as Fort Edward. It is true that we were prepared to find it a very respectable school, but the simple truth is, that we have visited a dozen colleges, so called, in different parts of the country, not one of which is equal to this Institute, either in its educational thoroughness, in the results it produces, or in the number, mature age, and respectability of its students. But before adducing any evidence of the justness of this estimate, let us give our readers some idea of the Institute buildings and the manner in which they are prepared and furnished for the good work for which they were designed; and this we cannot do better, or more faithfully, than by extracting the following passage from the catalogue:

"The buildings are of brick, constructed in a substantial and permanent manner, and provided with desirable fixtures, promotive both of the comfort and health of the occupants, and of the order and economy of the establishment. The main building is 300 feet long by 40 feet wide, and five stories high, and is devoted to students' and teachers' rooms. The north wing is 130 feet by 40, and is devoted to public rooms. The Ladies' Department is in the east part of the main building, and is separated from the Gentlemen's by public rooms and partitions. It is provided with separate entrances, staircases, and passages to the public rooms. The Institute, under one roof, is provided with a spacious Chapel, extensive Commercial Rooms, twelve Music Rooms, an ample Ladies' Gymnasium, four Literary Society Rooms, Parlor, Cabinet, commodious Recitation Rooms, conveniently located, arranged, and furnished; among them a Chemical and Philosophical Laboratory, and a Painting and Drawing Room; also a Dining Hall furnished for 300 boarders, with corresponding Kitchen accommodations."

Having made the necessary arrangements at the hotel we employed a vehicle, at 5 o'clock P. M., and drove to the Institute, and our first surprise was the extent of the buildings de-

Ψευδόμενος ουδείς λανθάνει πολύν χρόνον.

Ex. Incert. Comaed., p. 208.

to send their sons to Peekskill to be educated by him! We could not know then, but some of his statements were true. Now they only remind us of a line in Menander, which we beg leave to transcribe here, recommending it to that gentleman as a motto for his catalogue:

scribed in the above extract. Proceeding to the study of Dr. King, to which we were directed by our cicerone, we introduced ourselves to that gentleman as a person, who taking an interest in education, would like to be present at some of his recitations next morning, if agreeable to him. The Doctor politely expressed his willingness, at the same time asking our name. Some may think that we ought to have given the latter without being asked, and perhaps we ought; but our only reason for the omission—an omission we usually make in such circumstances—was that we do not like to seem pompous, and wish to cause as little trouble as possible. At all events, Dr. King soon showed that he had no fear of criticism, and no prejudice against reviewers. Our first interview terminated with the understanding that next morning we were to visit such classes as we wished to see, and with this understanding we bade the doctor "good evening," and returned to the hotel. But we had not been there more than ten minutes when he entered, and kindly asked, were we the Quarterly editor from New York, adding that Mrs. King, with quicker intuition than himself, said at once it was we. He did not call, however, to offer any objection to our hearing his recitations in the event of our proving to be the reviewer alluded to, but in a very different spirit, and for a different purpose. He kindly offered to send his carriage for us, and assured us that it would afford him pleasure to have us hear every recitation in which we took any interest.

That this was not merely the language of courtesy we had ample proof the next day, for there was not a class we had time to visit to which he did not introduce us; and when we did not wish to question the students on his invitation, being unwilling to interrupt the exercises, the doctor questioned them himself, and did so much more searchingly than we could have felt justified in doing. We can truly say that we have nowhere spent three or four hours at any similar institution in a manner more agreeable to ourselves. Neither in New York, nor in the modern Athens—both of whose best schools, male and female, we have visited—have we heard

more creditable, or more satisfactory recitations, either in the sciences, or in the languages.

The male professors at Fort Edward are very competent men; and, with the exception of Dr. King himself, the female professors are in every respect their equal as instructors. This is all the more important from the fact that, as most of our readers are aware, the Collegiate Institute is devoted to both The doctor's own family—Mrs. King and her two daughters—certainly afford the young ladies good examples of lady-like womanhood. Miss King, who is not more than sixteen or seventeen, is highly accomplished, quite a good Latinist, and, withal, possesses considerable personal beauty. She takes her Virgil even to table with her, and whenever she meets a construction which she is not sure she entirely understands, her father has to explain it to her, and to him it seems much more agreeable than irksome to comply with her wish. Miss Bancroft, the Preceptress, who has charge of the whole female department, is a lady of superior culture, and eminently lady-like both in form and deportment.

The Rev. Dr. King has no "military organization" like the Rev. Mr. Jackson, of Tarrytown, or the Rev. Mr. Flack, of Claverack. Yet he has a much larger number of male students than either, and many more of his students are of mature age. And what is still more important, his students are much more advanced in education; although we should be unjust did we place Mr. Flack's school in the same category with burlesque institutions like the Jackson Military Institute, the Peekskill Military Academy, and the Yonkers Military Institute. Most cheerfully do we bear testimony to the fact that it is more superior to all these than it is inferior to the Fort Edward Institute, although this inferiority struck us as strongly marked. Let that pass, however, for a moment.

We confess we visited Fort Edward with some doubt as to the advisability of having both sexes educated side by side, in the same classes, after they attained a certain age; but we saw nothing in any class, or class-room, having any bearing on the question, which had not a tendency to show that under proper restrictions, such as those which Dr. King knows so well how to impose, without seeming even to the students, male or female, to do so, no unfavorable results need be feared. Nay, we are inclined to accept the conclusions at which he has arrived after an experience of nineteen years as head of the Collegiate Institute, and which he expresses as follows in his catalogue:

"1. The association of young men and young women in the same classes and exercises appeals powerfully and constantly to a healthful spirit of emulation, and is greatly promotive of thorough scholars. The average tone of scholarship is decidedly higher in those classes where both sexes are well represented, than in a class composed exclusively either of gentlemen or of ladies. In the matter of rhetorical or oratorical exercises, this result is brilliantly obvious.

"2. The daily association of young ladies and gentlemen, in the presence of their teachers, exerts a most salutary effect upon the manners of both; tending powerfully to render the young men courteous, self-respectful, refined and manly, and the young women modest, decorous, graceful and womanly. A young lady educated thus, naturally, is likely to become self-poised and to develop a symmetry and completeness of intellectual stature rarely attainable under less favorable circumstances."

Undoubtedly this fully accords with what we have seen and heard at Fort Edward. But there are none that send either their sons or daughters to boarding-schools who can be entirely indifferent to the character of the table set for them. Every intelligent parent knows that neither the mind nor the body can improve much on unwholesome food, or on too scanty an allowance of food that is not unwholesome in itself. We have remarked above that where the mental pabulum is defective, the physical pabulum is very apt to be defective also, and vice versa. To some of our readers this may seem a mere jest, but in instances like those pointed out in the preceding pages, there is too much truth in it. Now, if we turn to the other side of the question, we shall find the same principle illustrated. After we had witnessed the recitations of so many classes at Fort Edward, Dr. King politely insisted on our dining with himself and his family, in the spacious dining-hall of the institution, surrounded by over two hundred students. Instead of fat pork, as at the Jackson Military Institute, or goat, or horse flesh, as at the Peekskill Military Academy, etc.,* the first dish served up at Fort Edward Institute was a magnificent roast turkey, and all the other dishes were in keeping with it. Dinner being over, Dr. King asked us whether we preferred hearing the afternoon recitations, or having a carriage drive for an hour or two. Being quite satisfied with all we had heard of the former, we acknowledged our preference for the drive, and the Doctor, accompanied by Mrs. King, drove us accordingly to all the attractive places in the neighborhood, pointing out to us localities and structures possessing a deep historical interest derived from the revolutionary Thus, for example, we had an opportunity of seeing, not only the spot where the beautiful and accomplished Miss McRea is supposed to have been murdered by the Indians while going to meet her lover, but also the house in which she resided, and from which she proceeded on her fatal journey. In short, there is scarcely a spot within three miles of the old Fort which the Doctor did not render classic in our estimation by some interesting anecdote of our great revolutionary struggle, so that between the exhilarating effects of the drive over a picturesque and beautiful plateau, presenting almost every variety of landscape scenery, and the various historical reminiscences alluded to, we did not feel the hours passing until it was time for us to prepare to meet the New York train, when the doctor kindly drove us to the hotel, and we took leave of Fort Edward, feeling that the inhabitants of that handsome and thriving village may well be congratulated, as they claim themselves, on having one of the finest and most ably managed educational institutions of its class in this country.

^{*} A lady who spent what she calls the most unprofitable year of her life at the Nyack Institute happening to see the above, remarked to us, with considerable feeling, "You run down pork, goat, and horse flesh. Well, I am no admirer of any of those articles, but at Rockland Lake we often wished for the worst of them in preference to the hateful cow's liver and still more hateful sausage which were the staple viands at that institution!"

On our way homeward we spend the night at Hudson, so that we may reach Claverack College in the morning before the recitations commence. We find the president newly decorated by our mythical State University with the title of Doctor of Philosophy (Ph. D.), and in excellent humor. According to a shrewd villager whom we happened to meet at the station, his full address now is "Rev. Dr. Brigadier-General Alonzo Flack, President of Claverack College and Hudson River Institute." Be this as it may, the head of the institution received us very politely; nay he went so far in his courtesy as to invite us to read the Gospel of the day to the students, male and female, at morning service; but we, sensible of our lack of sanctity, begged leave to decline the honor. We certainly have no disposition to say an unkind word of either Dr. Flack or his College; but there would be no use in our spending our time and money in visiting the latter. especially as we have not much of either to spare, did we fail to give our opinion of it, at least in part. As at the Fort Edward Institute, both sexes recite together in the same classes; but, unlike Fort Edward, Claverack has a "military organization."

We have already given our opinion of other differences between these two institutions, and we are sincerely unwilling to enter into particulars. Most cheerfully do we say that a certain amount of knowledge is communicated at Claverack, but if we compare it to that communicated at Fort Edward Institute, at Riverview Academy, at Poughkeepsie Female Academy, or at Mount Pleasant Academy, it reminds us too forcibly of the line in Dryden—

"Dim as the borrow'd beams of moon and stars."

The Rev. Dr. Flack has kindly sent us a copy of his last catalogue by mail, but we regret that we find in it nothing to alter the opinion which we could not help forming in the class-rooms of his institution. Its effect on us ought perhaps to be different, but we can only exercise such judgment as we happen to possess, however defective it may be. The fairest way, we think, is to let the pamphlet speak for itself. Then,

among its leading precepts is the following:—"The obvious necessity for a general and thorough military knowledge can be supplied solely by making it a part of student life" (p. 16). This must make a deep impression on the young ladies of Claverack, especially on the rougher and braver part of them. It is certain, however, that the Rev. Dr. Flack is very careful of both male and female students. That even their baggage is to him an object of pious solicitude, may be seen from the following graceful "regulation:"

"Twenty-five cents will be charged for bringing each Student's baggage from the station, and the same for returning it there." (Cat. p. 22.)

If it be borne in mind that the station is about a hundred yards from the College, this must seem very liberal and very kind! although some are ill-natured enough to say that it is very shabby. Be this as it may, we were informed confidentially, at Claverack, that the Rev. Dr. Flack would be nearly as great an educator as he claims to be, if he were only a trifle more learned than he is, and a trifle less fond of money. While revolving this observation in our mind, and comparing it with the baggage tariff, we happened to cast our eye on a column of the New York Herald headed, "The Appropriation for Academies Lost," and we read as follows in the Albany correspondence of that journal:

"THE WAY THE MONEY GOES.

"In view of the late revelations made in the Herald of the way the money goes that the people contribute to the charities of New York, it was interesting to hear the statement of Mr. Beebe, of Sullivan, in opposition to the appropriation for the academies. He said that the Claverack Academy, which received last year \$4,000 from the State, spent out of that sum only \$350 for purely educational purposes, the rest of the money going into the pockets of the managers. If he had time he could show that the State appropriation was swallowed up in the rest of these academies in providing luxuries for the folks who conducted them. The result of the debate was that the entire appropriation was stricken out without much time being lost, and the bill accepted. The general appropriation bill, as passed by the Assembly, with \$125,000 to academies stricken out, foots up to \$712,360 less than it did last year."

Far be it from us to attribute avarice, or greed, or extortion,

or even undue parsimony either to the Rev. Dr. Flack or to any of those of his educational brethren, whether clerical or military, whose institutions we could not admire. It is for us only to record the facts as we find them, taking the liberty, here and there, to give our humble opinion as to their nature and tendency. It is almost needless to say that in attempting to give an outline of the characteristics of so many institutions in one article, it would be impossible for us to present to our readers all the circumstances and data upon which our opinions of the good, bad, and indifferent are based. But we have carefully noted all; nor shall we fail to preserve our notes for future reference. In the meantime we can truly say that none would be more sincerely glad than we to learn that an improvement had taken place in any of the schools which we have deemed it our duty to denounce as impostures; nor are there any to whom it would afford more pleasure to proclaim that improvement "to all whom it might concern."

- ART. VII.—1. The Writings of George Washington. Being his Correspondence, Addresses, Messages, and other Papers, Official and Private, selected and published from the Original MSS., with a life of the author. Notes and Illustrations by Jared Sparks. 12 vols. Boston, 1837.
- Correspondence of the American Revolution. Being Letters of eminent men to George Washington, from the time of his taking command of the army to the end of his Presidency. Edited from the Original MSS. by JARED SPARKS. 4 vols. Boston, 1853.
- 3. The Life of George Washington—Commander-in-Chief of the American forces during the War which established the Independence of his Country, and the first President

of the United States. Compiled under the inspection of the Hon. Bushrod Washington, from original papers bequeathed to him by his deceased relative. By John Marshall, Chief-Justice of the United States. In 5 vols. 1804.

 Life of George Washington. By Washington Irving. 5 vols. New York.

Washington is the greatest character that America has produced. He united those attributes that constitute him one of the great men of the world. He organized a nation. established a republic. He voluntarily withdrew from public life as soon as he found it stable. By his disinterested course, for twenty years, he inspired America with his great qualities. He is thus the father of the republic; and he must ever remain the model character, because he was tried by greater exigencies than other men, and always rose superior to the exigency in which he was placed. Adams, Jay, Jefferson and Franklin, acted a great part in the Revolution; but independence would not have been achieved without Washington; and we should have fallen a prey to anarchy without him. So Washington raises our ideas of greatness by that union of prudence, judgment and disinterestedness which we find blended in the characters of few great men of the past. He was not ambitious like Cæsar and Napoleon, who destroyed their country for their own glory; Washington was content to raise America.

His struggle was like that of Frederick the Great, for his country, and each left a country. But Frederick dissembled, broke faith, and dimmed his renown; while Washington never deviated from the purest principles by which nations are governed. So if Washington has not the military splendor of Frederick, Napoleon, and other great captains of modern times, he yet possesses a moral grandeur that they never attained, and sheds an influence upon the world that elevates and improves it. Such a noble character has America produced, and thus it is fitting that he stand first in that galaxy of great men that

ever surround him and set off his greater glory—a glory not tarnished by one selfish or ignoble act.

Washington became a military hero. He was nominated to the command of the Continental army by John Adams at the age of 43. He consented to serve upon the condition that he was to receive no pay; but to be reimbursed for his expenses alone. That account was strictly kept for eight years in his own journal, and that expenditure was returned him. La Fayette performed the same magnanimous services for America; besides, he lavished his own fortune in our cause; and he was afterwards repaid by the gratitude and generous offering of this people, when he re-visited America in 1824. Shoulder to shoulder La Fayette stood by Washington, through the trying scenes of the Revolution, when America was too poor to even clothe and provide for her common soldiery. He came to our shores at his own expense when our coffers were too slim to give him aid; and thus he is worthy of comparison with our own Washington in the generous aid he gave our country. He was always trusted and confided in by Washington, and was made a leading general in our armies, which position he held and ably sustained until the surrender of Cornwallis at Yorktown. La Favette stood firmly by Washington during all disasters and intrigues to displace him, and thus he had a claim upon Washington never forgotten in succeeding years.

Washington held the chief command to the end of the war, and surrendered his commission to the Congress from whom he received it eight years before. He had taken the command after the British army had gained the victory at Bunker Hill and were in full occupation of the city of Boston. He found scattered and undisciplined forces without any organization. He had them to create and organize. Without adequate appointments, and without the means of providing for his men, his aim was, first, to utilize a force to resist the enemy. With such scanty material for war, he was embarrassed with constant weakening of the army, as his men were hardly initiated in the art of war before the terms expired for

which they enlisted. Under all these embarrassments, Washington kept up and fought the battles of the Revolution against a well disciplined and appointed army, sustained by a great nation, and led by able generals. His policy was to strike the enemy where he was weak, and protract the war till he wore out the enemy and the patience of the British nation. He never had a force that was able to assume the offensive and follow up his victories until near the end of the contest, when he was joined by the French. But he fought battles that were creditable to American valor, and which reflected the highest credit upon him as a soldier. He displayed, as a great captain, intrepidity and strategy, ever saving his men and husbanding his meagre resources, until the opportune moment arrived to make the victory decisive. He mainly fought in retreat, seldom hazarding a great battle, except in checking the enemy. His offensive engagements, were nearly all successful, because he was rapid in attack, directing his forces with military skill and judgment, and making good his retreat before overwhelmed by superior Thus he resisted the advance of the British army at every point, while it had the advantage of water communi-He kept the interior lines, and fell back, when necessary, upon the high lands of New York, New Jersey and Pennsylvania, where his intrenchments are still seen. By great judgment and heroic purpose he thus led the American army, through every disaster and privation, from Dorchester Heights to Yorktown; where victory perched upon his standard, and forever severed these colonies from Great Britain.

During this period he encountered the enemy in force, while he had to baffle intrigue and discontent, and sustain himself against every disaster. He overcame the enemy, because he had the strength to meet disaster, and inspired confidence in the soldiery and the leaders of the Revolution. He must have been displaced had he not been a man of the highest mould, of the most inflexible purpose, combined with decisive action and noble bearing. His courage and judgment won

our independence. He displayed all the qualities of a great military leader; and, like Wellington, he finally triumphed. He fought no battles that can be ranked among the great military contests; because the war he led had no ample proportions to take that rank. Still, if we consider the means under his control, and the enemy that he encountered, together with the duration of the contest, and his final triumph, Washington must hold a high place among the heroes of the world. The same qualities heading a great army, sustained by the spirit of a great nation, would have placed him very high in the rank of great field-marshals; but his renown as a great military leader is not more brilliant than his pure fame as a statesman.

As a statesman Washington possessed all the elements of a great executive, and a wise statesman. For purity of aim and desire to arrive at just conclusions, upon every subject, he is not surpassed in the history of the world. He consulted, and advised, and came to his own conclusions; he formed this habit in the army, and he carried it into civil life. While his mind was intuitive and certain in conclusion, no one more justly considered and weighed the suggestions of others. He was a strategist in the field, sure and decisive in execution; but in public life he was direct and straightforward. He had been trained, from the age of twenty-two, to military and civil affairs, serving fifteen years in the latter, and seven in the former, prior to his appointment as the great military leader of the Revolution; and thus he imbued his compatriots with his eminent fitness for the place to which he was assigned. was appointed General-in-Chief by the unanimous consent of the Continental Congress in 1776; he was unanimously chosen by the Convention, that framed the Constitution, to preside over its sitting, in 1787; and twice he was unanimously elected President of the United States, by the elec-These evidences proclaim his hold upon the country, and his undisputed merits. Thus even and well balanced, he laid aside the sword, and helped to lay the foundation of a general government, then indispensable to our stability and prosperity. He saw and fully realized, through an eight years' war, the inadequacy of the Confederation for the purposes of a general government, and early made known his opinion that we should form a more perfect union of these states. He favored the adoption of the Constitution, and said as he signed that instrument, that the states had now the last opportunity to cancel the confederation in peace, or it would be cancelled in war. It seems most strange that there should have been any division among statesmen as to the worthlessness of the Confederation, and the necessity of a more efficient central government. Washington and Franklin threw their influence in favor of a constitutional change, and the adoption of a stronger government; and thus they supported the Constitution in that great convention called to amend the articles of the confederation; and they were sustained by the great talents of Pinckney, Randolph, Madison and Hamilton. The Constitution having been adopted, Washington was chosen the first President, and soon entered upon that great office, with Jefferson, Knox, Hamilton and Edmund Randolph for his cabinet.

A new and untried system was to be put in operation, and thirteen states watched the experiment with jealousy. But Washington selected his cabinet so wisely that there was little partisan division during his first administration, and it was hardly felt at the time of his second election. Still there had been from the beginning a marked difference of opinion between Jefferson and Hamilton as to the policy of the general government, and the expediency of the leading measures of the administration.

The views entertained and advocated by Hamilton prevailed. This ultimately led Jefferson and Madison into a new party at the end of Washington's administration. But his prudent course kept the country from falling under partisan influence for nearly eight years, until the French Revolution broke in upon and divided us as to the course we should adopt toward France. Washington maintained a neutral course, and this produced a wide discontent on the part

of the partisans of France. It was thought that we were under obligations to France growing out of the Revolution, which were recognized by an existing treaty. with the internal divisions, divided the country into the federal and republican parties. During the heats of these times Washington was himself denounced and defamed, as being a monarchist and a British sympathizer. Thus he saw verified the truth that no purity, no services howsoever disinterestedly rendered a country by its best men, shall escape unscathed and unsullied the foul breath of calumny. Washington keenly felt the injustice of those attacks, and noticed them in a becoming manner in his farewell address, but which was obliterated at the suggestion of Hamilton. He said that services rendered his country from the prime of his life, in obedience to the call of the nation, should have protected his good name. The last act he performed before he retired from the presidential chair was to deposit a paper in the office of the secretary of state, denying all knowledge of those letters alleged to have been written by him, in favor of England, which first appeared in Great Britain; but Washington stood too high to be injured by this calumny and impeachment of his fidelity to the colonies. He left this paper to vindicate his character.

Thus we find him firm in his course, wise in policy, and comprehending the necessary steps to be taken to place his country on a national and secure basis. Under his lead the the confederation disappeared; and with his strong arm the Constitution went into full and complete operation, giving us tranquility at home and peace abroad. He repressed insurrection in Pennsylvania, and upheld our rights against foreign nations. He accepted the necessary measures to regulate our commerce and establish a sound national currency, and thereby remedying the evils that had existed under the confederation. With the aid of Hamilton's prolific genius, the productive energies of the country sprang into life. Thus began a republic of four millions, eighty years ago, stretching along this side of the Alleghanies, and which now extends from ocean to

ocean, comprising ten times that population, and still increasing with a rapidity hitherto unknown to civilized states. Such a country is now a fact among nations, and it is known to the ends of the earth as the land of Washington.

Taking the range of Washington's influence by the vast results with which he is connected, he was the most fortunate of men. Loved and idolized in his own age, he is now revered among civilized states as a great, wise, and just man, such as the ages have hardly repeated since time began. If we approach him more nearly, and scrutinize his character and his conduct, we see no flaws, and hardly an error in his career. Modestly he assumed every great office that he ever held, and when his term expired, he laid down the emblems of office with real satisfaction that he was relieved from weighty obligations. Such was a marked trait in the character of Washington to the end of his career.

When we survey his early life, we could hardly expect so consummate a character to arise from his meagre opportunity. His was the school of discipline, and not of acquisition. was reared amid the elegant refinements of Virginia, where good breeding and solid worth impressed all her great men. Under these benignant influences Washington's character was formed. His education was exceedingly practical, and limited to the most essential branches. He became a surveyor for a time, but always had the best associations of Virginia, and was a gentleman of refinement. He was exact and punctilious in his course of life, disingenuous, and a model of the He was born and educated among strictest integrity. men of refinement, and the domestic influences of home early impressed and elevated his noble character. He made such studies as became his position; and acquired a correct and perspicuous style which is seen in all his writings and correspondence. He wisely accepted aid in drafting his most important state papers. Hamilton put in shape much of the Farewell Address, from the suggestions of Washington. Everett did the same thing in the Hulsmann letter, at the request of Webster. Both, however, finally wrote out these productions

themselves, retaining the larger part thus furnished them. Indeed, these papers were well considered and revised by their actual authors. Washington gave Hamilton an address drawn by Madison at his request, some time previous, and accompanied it with other suggestions that he wished the address to embrace. The address embraced these suggestions, with few exceptions. Webster used the draft of Everett and that of the assistant secretary of state, Mr. Hunter, as the basis of that important letter. But Washington's writings show that he took the larger part in the framing of the Farewell Address, if style is the test. He certainly had a more diffuse style than Hamilton, and this address is not just like anything we find in Hamilton's writings. So we say of the Webster letter; it is not equal in strength or style to his own letter upon impressment; though it is among the finest state papers of Mr. Webster.

But Washington is to be studied and admired for his great personal qualities and manhood. He was in actual affairs both military and civil, at a very early age, and passed his life in the service of his country. Like Jefferson, he never made set speeches in legislative bodies: still, his influence was felt, and he was regarded as a man of the best judgment and foresight. He thus had influence upon affairs, like Samuel Adams in the first Congress, of which Washington was also a member, when he was chosen to take the chief command of the rebel army. Thus his life took him away from sedentary pursuits and made him what he was, a man of action. see him in after years always seeking retirement, and pursuing those delightful and useful studies that so much adorn and set off a virtuous and illustrious life. From this retreat he was long delayed, by the demands of the country, against his own wishes.

Washington was a man of inflexible purpose and of the strictest morals. He was a devout man, always observant of the rituals of religion; and in the darkest hours of the Revolution he was seen, under very impressive circumstances, to withdraw himself and alone to enter into silent prayer. Upon

another solemn occasion he exhibited his devotional feelings; and his frown became a rebuke. It was in the convention that framed the Constitution, when discord hung over it, and when a member objected to Dr. Franklin's suggestion that the convention should be opened with prayer. But Washington was no formalist. He looked upward for wisdom and light. Thus he possessed an elevated moral nature that kept him inflexible and just through all the exigencies of life. To this moral grandeur he added a strong and clear understanding that was never deceived nor misled. His understanding was exact and unmistakable in conclusion. His mind was equally comprehensive. He was precise in execution and details; by habit punctual. His reprimand to Hamilton for a few moments' delay in meeting an appointment caused Hamilton to leave Thus we find Washington methodical and his military staff. exact in all the details of business; while he was observant of all the proprieties of social and official intercourse. But he had strong and ardent friendships and a warm heart, somewhat concealed under his dignified manner. His person was of the finest mould, and exceedingly commanding. He had elegant and courtly manners; and appeared as though born to com-The statue of Houdon, at Richmond is regarded as a faithful likeness of our great military chief. To the impressiveness of person he united an amiable and composed temper, that, under great excitement, exhibited impetuosity of man-So, taking Washington all in all, in his general character we shall not look upon his like again; and no other succeeding man will have such an opportunity for distinction until the political elements shall dissolve and seek a new for-Thus Washington will remain in our history, unapproached and unapproachable, as a grand and noble character, in which all the virtues so mixed as to make him the most symmetrical personage that has yet appeared among men. Fabius was patient, Aristides was just, and Cato was noble; but Washington blended all in one, and stands out in the full blaze of modern light, resplendent and immortal.

If it be asked what is the basis upon which this great fame

reposes, it is sufficient to say that he comprised in himself the virtues of a great military leader. He liberated thirteen colonies and made them a nation. Vested with despotic power, he returned it to the people. He chose a republic instead of imperial and personal aggrandizement. He consented to hold office so long as the interests of the country demanded, but no longer. These were high principles of action in any age, and would stamp any man as great. Besides, Washington set an example of administration that was pure and elevated. No corruption ever found place under his rule. He sank not to the grovelling level of partisan politics, but repressed party and faction by the majesty and weight of his character. His appointments were pure and elevated; and this example is not lost to the republic, though degeneracy has reached it.

Washington was tried, and proved equal to hold the reins of government just and even in every exigency. He kept peace with France without debasing the nation. France could not demand that we should become a party to European war. We owed no such obligation to her, and Washington steadied the helm of state safely through all these perils, when we were weak.

He also taught us the love of liberty and of country, and the necessity of integrity in a republic. He showed his respect for man and free government, and his desire that it should be a success in America; and had we found a Washington to succeed him, there would be no question of the value of self-government to mankind. Thus his elevated course will ever illustrate the principles that he held and embodied in his administration of the government, and endear him to all future generations. He thus taught, by the wisdom of his action, rather than by any set theories, and so we see Washington mainly in his example and his teachings upon actual affairs. He laid down in his farewell address these sound maxims, then essential to our preservation: that we enter into no entangling alliances with foreign nations; that we repress party rage and sectional feeling, and above all, that we cherish the union of these states, as the palladium of our liberties, and our only hope.

So Washington stands an elevated and illustrious character, ever changing our ideas of greatness; and teaching us that they alone are great who toil for the advancement and preservation of the race. As those heroes and statesmen who take this rank rise far above the vulgar great, whose principles are success at the expense of mankind, and who rule nations for selfish ends, so we place our Washington alongside the select few-the heroes and sages of other landsand the association of his name pales no glory of theirs. But it is said that other men have been connected with greater events, and more brilliant deeds than Washington, and it must be allowed that such was the case. Still, if we give him credit for what he accomplished for America and the human race through the success of free government here, we need not shrink to compare him, for the good he has done, with the most brilliant heroes who have awed the world with their splendid achievements. We are awed by the sublime genius of Napoleon, but we see France subjugated by combined Europe to check the audacity of Napoleon. He sunk France in his own egotism, and justly fell and lived an exile. Cæsar achieved military glory of the first order, but he destroyed Roman liberty and the Republic in violating the laws and the Constitution of his country. They led great nations to their own defeat and disaster, while Washington united feeble colonies and made them a nation. If we measure Napoleon by his deeds he is the hero of modern times; but if we compare him with Washington by the benefits he conferred upon his country and the example he gave the world, Washington is greater. One dazzles by his genius, and the other commands by his character, and while we contemplate them, we call one the destroyer and the other the benefactor of his race. So in the just estimate of events, Napoleon did not save France, while Washington can almost be said to have created America.

But it may be questioned whether Washington accomplished all this! Surely it was not in his power to have acted the part of Cromwell and Napoleon. He could not have established an empire, though we were educated in all

the traditions of England, and Washington was in his position in the line of succession. Suffice, however, that he repelled with sternness and decision every advance to personal government, and led the dream of other ages to the founding of the model republic, which still lives under his influence and example. He saw that the new government must be confided to the people, and he sought to found it upon justice and en-Thus, it is just to say that America rose during principles. with his destiny and in a large measure owes its fortune to him. So his work liveth after him; for it still stands strong and durable, and it is the prayer of every true American that this may never be a land unworthy the pure fame of Washington. When we find such virtues combined in such an exalted character as that of Washington, it suffices that we pronounce his greatest praise by the simple narration of the outlines of such a life and thus we need no set words to display his glory, and affix to his name an undying renown. Though others may have surpassed Washington in military glory, yet who among men united such integrity and disinterestedness in his whole career. Duty was the great principle of his life, and the firm application of this principle in the whole course of his career constitutes his distinguishing excellence above the low and vulgar great of the world. lies his greatness; for he brought into action a strong, cautious but clear intellect to guide his difficult course in all the trying exigencies of the country. Thus Washington's example inspires mankind to good deeds.

NOTICES AND CRITICISMS.

SCIOLISM.

The American Cyclopædia. Revised Edition. Vols. I, II, III, IV. D. Appleton & Co. New York. 1873-74.

It is now about eleven years since the "New American Cyclopædia" was completed. The merits and defects of that work we have not failed to set forth, from time to time, to the best of our humble ability, as occasion suggested; and with regard to this "revised edition" of the former work, we shall not withhold the expression of our opinion.

The preface, is a somewhat grandiloquent performance, calling attention to signal developments, which have taken place in every branch of "science, literature and art," and explaining that "the illustrations which are introduced have been added, not for the sake of pictorial effect," etc. * * * "As far as was consistent with the nature of the case, they (the editors) have confined themselves to the historical relations of facts, without assuming the function of advocates or judges!" As though history were not different from mere chronology, in being a judicial estimate of the value and significance of facts!

The preface closes with the remarkable assurance that the work "will be completed mainly by the same writers whose contributions are contained in the first edition, together with many others of equal ability," etc.! The italics, of course, are ours,

Throughout these introductory remarks there is a studied belittling of the poor, old defunct Cyclopædia, whose fame was once blown through all the trumpets of advertising journalism, and which so many deluded possessors thereof, must now hasten to dispose of by bookauction, or for old paper at so much a pound! What a pity that so many credulous enthusiasts went to the additional expense of "half Turkey Morocco binding, or full Russia—or full Turkey Morocco!"

In the long list of contributors whose names are brandished in the "Specimen Pages," we notice the names of several distinguished gentlemen, who have been dead for a period of years: it is a little odd that their names are still, by implication, connected with this "revised" edition, "forming in fact," as the preface assures us, "a new Cyclopædia!" But perhaps the actual contributions of Professor Felton, for example, or Frank Forester, or Thomas Starr King, were so inconsiderable that the retention of their names is of as much real significance as was their original use.

But the high-sounding phrase of the editors' manifesto is "cold modesty," beside the magnificent statements of the publishers on the fourth page of the cover of "Specimen Pages." With bated breath we read that "the American Cyclopædia is sold to subscribers only," that "it will be completed in sixteen large octavo volumes," etc., etc., the

whole costing the publishers, before the manufacture begins, a sum exceeding three hundred thousand dollars," that "the Best Cyclopædia Ever Published, one that will supersede all others, is now offered to the public at a very moderate price, less than one cent a page!"

"Just think!" is the pathetic and insinuating suggestion of the publishers' concluding exhortation, "just think! a saving of ten cents per day, the price of a cigar, or many other expenditures for luxuries or frivolities of a like amount (the appeal, as will be seen, though fervid, is a litte mixed in construction at this point), would pay for a complete set of the Cyclopædia by the time of its completion."

It will be noticed that some of these enthusiastic statements are highly improbable. "The best cyclopædia ever published, one that will supersede all others!" exclaim the publishers. The editors' tone is not quite so lofty; they evince a little more regard for truth. "In a work formerly intended for popular instruction and entertainment (the italics are ours), it is obvious that elaborate treatises on the subjects which are brought forward in its pages, would be inappropriate."

Ah! we see and understand at last! It is a popular Penny Cyclopædia that we are offered for the modest sum of five dollars a volume, extra cloth, or ten dollars "full Russia." Now we understand why the pictures of the Natural Bridge of Virginia, of Cincinnati, of Chicago, "after the fire," of Professor Longfellow's House, of the Atlantic Dock, and of birds and beasts, and of creeping things, and fowls of the air, are introduced.

We fear this attempt to blend picture book for children of all ages, and for old ladies of both sexes, with cyclopædia for students and intelligent men and women (who alone use a cyclopædia) will result in a more ridiculous failure even than that which befell the "Great American Cyclopædia," of ten years ago, now, alas! quite defunct.

"Lost to life and use, and name and fame,"

In one of Wilkie Collins' books is described a clever adventurer, who, on one occasion, when questioned as to his proper business, remarked, that he was "a moral agriculturist—he sowed and reaped mankind." It was a frank avowal of a profession, not yet wholly fallen into desuetude.

Some time ago it was the custom of "enterprising" publishers of new school-books, among other expedients, to offer to introduce them at half price, or by partial payment for the books displaced; nay, we suggest in all kindness, to the happy publishers of "the best cyclopædia ever published, one that will supersede all others," that it would be a graceful thing to offer to all cash buyers of the new to take back the old, and (by the editors' own showing, as well as by the universal testimony of scholars) now worthless, Cyclopædia, at, say half price!

This valuable suggestion we make, not in the interest of the present

unfortunate possessors of the former edition—they are out of pocket enough already, and this arrangement would still further deplete them, with small accruing advantage—but solely in the interest of the enterprising publishers, and to help to make business a little livelier. The plan might not succeed, but is it not worth trying?

With these general remarks, which we shall take occasion to follow up later with specific comments, we take our leave for the present of the "revised edition;" not, however, without asking everybody to admire the industry with which nine-tenths of those obsolete old "cuts" have been gathered up from a thousand sources to please the little ones!

SCIENCE.

The Structure of Animal Life. Six Lectures. Delivered at the Brooklyn Academy of Music, in 1862. By Louis Agassiz. 3d Edition. New York: Scribner, Armstrong & Co. 1874.

To those who mourn in the death of Professor Agassiz the loss of a revered teacher not less than of a world-famous investigator, these "formal utterances,"—to use the phrase of the publishers' note,—will come like the familiar and invigorating breath of the glacier to the jaded Alpine climber. To the savant they naturally offer nothing new, being only the felicitous and circumspect presentment of a few accepted facts, drawn from the repertoire of natural history and paleontology, and, with thoughtful consideration for the finite powers of a popular audience, forced in advance from dusty difficulties of formula and symbol.

The general reader, may, from the perusal of these lectures, acquire a clear but necessarily circumscribed idea of the system of permanent structural types, upon which rests the modern classification of animals;—he may also learn something of the manner in which the question of degree of "structural complexity" is applied to type, class and family, and made the authoritative list of rank. In the first lecture we meet the not unfamiliar radiates, mollusks, articulates and vertebrates. The type-characteristics of these classes are enumerated, and explained, and it is sought to show that the creative "plan" thus shadowed forth can, in the case of any given type, be recognized and traced in all allied families.

In the second lecture the theory of *Evolution* is arraigned. The individuality and performance of type-forms, asserted, as is claimed, plainly and dominantly throughout the structural range of genera and

species, are brought forward to testify against evolution. On this point we quote, as the lecturer's conclusion:

"So we have here two classes, which are strictly parallel in their gradations, having the same features with certain modifications of structure. And such a parallel series you find everywhere among these animals.

"So that the truth, as regard series, is this: that instead of one grand uniform succession from lowest to highest, there are certain broken series within the minor groups, in which it is possible to trace more closely and intimately links of subordinate series."

In the third lecture we find a painstaking man of science seeking to bring an audience,—drawn together to hear the "Graham Lectures on the Power, Wisdom and Goodness of God"—tenderly and without shock to their theology, up to the point of accepting with all its awful consequences the idea that the coral reefs of Florida point unmistakably to an antiquity considerably exceeding the Mosaic six thousand years!

In the fourth lecture we enter the field of physical agencies, and are shown how the mountain-slopes not only reveal the nature and contents of the lowermost strata, but afford us a comparative chronology, while the strata, Azoic, Silurian, Devonian, and the rest, being duly labelled and paged, are laid aside for daily use.

In the last two lectures, the fifth and sixth, Prof. Agassiz discusses that phase of his subject which involves the existence of Providence in nature, "or in other words, the recognition, on scientific grounds, of the working of a Providence in the world." "If nature," he says, "as we see it manifested in the facts I have presented, is the result of the working of mind, the result may have been accomplished by one of two methods, namely: 1st, By established laws; or, 2d, By direct action." Concluding this resumé, we may quote from the concluding lecture:

"* * * * Facts like this, I think, show the immediate working of mind in the construction of the animal kingdom. It is not a kind of work which is delegated to secondary agencies; it is not like that which is delegated to a law working its way uniformly; but it is that kind of work which the engineer retains when he superintends and controls his machine while it is working. It is the evidence of a Creator constantly and thoughtfully working among the complicated structures which he has made."

It will be noticed that these "formal utterances," of twelve years ago, be it remembered, wholly refute the charge that Professor Agassiz was unfairly reticent concerning his own belief or system, while using the weight of his name against every suggestion of the theory of development. Frequent and unmistakable are his declarations upon the points at issue.

We venture, in conclusion, upon a single suggestion: In discussing "gradation of the animal kingdom," the lecturer makes the statement embodied in our first quotation, and further on in the same lecture he

uses the following language: "Thus the classes are interwoven, as it were; "when you take the essential features of structure you bring them together; when you consider the external form only, you have yet recognized relations which escape in the other combination. * * * It is only in the minor divisions that we find a natural gradation, not in the arrangement of the whole group. The classes are superior or inferior to one another on the average, but not by such an arrangement as would place them in one serial order."

Now, would not the sangnine Darwinian plausibly insist that in these parallel series there was something very like "survival," and, in the natural gradation in minor divisions, a manifestly established "development?"

EDUCATION.

An Exposition of the Constitution of the United States. By Henry Flanders. 12mo, pp. 295. Phila.: Claxton, Remsen & Haffelfinger. 1874.

A Second title printed on the cover, which informs us that this book is a Practical Handy Book of the Constitution, is a truer definition of what Mr. Flanders has accomplished than that on the title page. Viewed in this light, it is a book which it is as impossible to blame or praise as a proposition of Euclid. It is short, reasonably concise, unimpeachable in its accuracy; it makes no claims to originality; it avoids discussion, and, from the nature of the subject, is necessarily somewhat dry. It would suit quite well for a text-book in a school, in the hands of a teacher well versed in the subject by study of more exhaustive treatises; and it avoids the danger of that reaction which frequently arises in the minds of the students of Story, from imitiation of that emiment commentator's too constant praise and admiration of his subject.

But with the exception that it includes the Fifteenth and other amendments which owe their origin to the late war, and notices legislation as late as 1871, it is not superior to Judge Story's work; but it would be unfair, perhaps, to demand of Mr. Flanders the extensive legal and constitutional lore displayed by that distinguished jurist.

During the early years of our government, the questions arising under the Constitution were, whatever may have been their importance, of comparatively easy settlement. The sailing, for the most part, was plain. But the civil war—it is impossible to deny it—put a severe strain, not only upon our resources and material, but upon the civil agencies of our existence and on the Constitution itself. The Constitution

tion with which everybody was satisfied in 1850, is viewed very differently in 1870. And great lawyer and indefatigable commentator as Judge Story undoubtedly was, a smaller man now must know many things of which he was ignorant. In other words, we have not yet had determined for us exactly how the Constitution came out of the struggle. To take but one feature, the tendencies of the nation twenty years ago were the reverse of centralizing. To-day, every new measure of Congress tends to centralization. It is not our purpose either to praise or deprecate this right-about-face in our movements, but merely to point out that the Constitution may doubtless receive new light, or new themes regarding it may come to light, when it is viewed from this different ground. Again, the recent amendments themselves have a centralizing tendency; the old jealousies felt by the original members, of their "reserved" rights no longer seem to exist, and this new phase in our politics needs study, explanation, and criticism.

Apart, too, from the constitutional amendments, or the "appropriate legislation" thereunder, it is patent—not to tread upon partisan ground—that there are many disheartening features in our present public condition, which a careful study of our Constitution might remove, or alleviate. It is surely not disrespect to say that there is at least a possibility that an instrument which was, ninety years ago, suited to our population, area, and comparatively simple needs may fail in some respects to be suited to our present vast domains and infinitely complex civilization. And accordingly there is a restlessness abroad which is looking eagerly around for some helping hand to lift us out of our present despondency.

What is wanted, indeed, is not a commentary, nor an exposition, strictly so called, but a thorough, liberal criticism, something such as Mr. Bazehot has lately given the British Constitution. A criticism which is not hampered on the one hand by too rigid a conservatism—for our laudatores temporis acti may as well accept the inevitable; we never can go back to our ante bellum days—and on the other is safely guarded against all tendency to iconoclastic enthusiasm. It is easy to tear down, but weary work to rebuild, and Mr. Gladstone has received a severe but just judgment on his too constant restlessness, which we, too, may take to heart.

Mr. Flanders, as we have said, does nothing of all this. His book is an explanation, as he says in his preface, "of the reasons upon which each clause of the Constitution rests," and the interpretations given it by the courts and the practice of government.

Besides the Exposition proper, the book has an appendix containing the Declaration of Independence, the Articles of Confederation, the Resolutions and Letter of Sept. 17, 1787, and Washington's Farewell Address. It has also the advantage of a full alphabetical index. In short—to compress our estimate of it into the briefest space—whatever

its defects are, we know no other volume of its size, or twice its size and price, which we would rather put into the hands of young students,—as just what it claims to be—"A Practical Hand Book of the Constitution of the United States."

On Self-Culture; Intellectual, Physical and Moral. A Vade Mecum for Young Men and Students. By John Stuart Blackie, Professor of Greek in the University of Edinburgh. 16mo., pp. 116. New York: Scribner, Armstrong & Co. 1874.

In Professor Blackie's previous work, published not long ago, entitled "Four Phases of Morals," we made the acquaintance of a clear and vigorous thinker, evincing considerable mastery of his subject, and handling it boldly. In the unpretentious little monogram before us we recognize the same method, and something of the same vigor and perspicacity, touched with a certain brusque earnestness of tone which goes far to convince and persuade. For a volume of so small a compass it contains many wise and practical suggestions to students. The book is divided into three chapters, which are devoted respectively to the culture of the intellect, physical culture, and moral culture. Nearly half the volume is devoted to the consideration of intellectual culture. The author begins by arguing that books, though very useful helps to knowledge, are never the primary and natural sources of culture; which are, life, experience, personal feeling, thinking and acting.

When one starts with these books, he admits he can fill up many gaps, correct much that is inaccurate, and extend much that is inadequate; but without living experience to work on, books, it is urged, are like rain and sunshine fallen on unbroken soil. "The parchment roll, is that the holy river, from which one draught shall slake the thirst forever? The quickening power of science only he can know from whose own soul it gushes free." This point he clarifies and enforces by the following illustration:

"As a treatise on mineralogy can convey no real scientific knowledge to a man who has never seen a mineral, so neither can works of literature and poetry instruct the mere scholar who is ignorant of life, nor discourses on music him who has no experience of sweet sounds, nor gospel sermons him who has no devotion in his soul or purity in his life,"

He therefore earnestly advises all young men to commence their studies, as much as possible, by direct observation of facts, and insists that those studies, both in school and college, be regarded as primary, that teach young persons to know what they are seeing, and to see what they otherwise would fail to see. Among the most useful of these he reckons botany, zoölogy, mineralogy, geology, chemistry, architecture, drawing and the fine arts.

Prof. Blackie is not likely to express, like our old friend the German linguist, upon his death-bed, with the last sigh that flutters up from his lips, the sole regret that burdens his departing spirit—"that he has not given the last twenty years of his life entirely to the Optative Mood!" Truly, "the thoughts of men are widened by the process of the suns." But, on account of the multiplicity and diversity of objects in the universe, the observing faculty would be overwhelmed and confounded, did we not possess some sure method of submitting the multitude to some regulative principle placing them under the control of our minds. This regulative principle is classification, and is discoverable by human reason, because it clearly exists everywhere in a world which is a manifestation of divine reason.

This classification depends on the fundamental unity of type which the divine reason has imposed on all things. This unity manifests itself in the creation of points of likeness in things apparently the most different; and it is these points of likeness which, when siezed by a nicely observant eye, enable it to distribute the immense variety of things in the world into certain parcels of greater or less compass, called genera and species, which submit themselve naturally to the control of a comparing and discriminating mind. "The first business of the student, therefore," says our author, "is, in all that he sees, to observe carefully the points of likeness, and, along with these, also the most striking points of difference; for the points of difference go as necessarily along with the points of likeness, as shadow goes along with light." He further advises the student to observe only one thing at a time, since looking at everything generally ends in remembering nothing.

The author proceeds to give some hints, more or less valuable, on the training of the reasoning faculties, on the study of logic and metaphysics, on the exercise of imagination, on the discipline and storing of the memory, on style, on the wise use of books, on professional reading, or *Brodstudien*, as the Germans call it, and some suggestions as to the acquirement of languages.

Dr. Van Norman's Classical English, French and German Family and Day School for Young Ladies. Organized in 1857. Brochure, pp. 29. New York, East 61st Street. 1873.

A FRIEND of education has recently placed this Catalogue in our hands with the request that we give our opinion of it in a quiet way, for the benefit of the good cause. Well, it is quite a pretty thing outside, and quite a curious thing inside, for it has an illuminated cover, and the words transcribed from it above are printed in golden letters, while the matter under the cover is still more transcendental in its way. But

before we attempt to give any idea of the peculiar character of the latter, let us pause for a moment to wonder whether this can be the same institution which used to be called "The Van Norman Institute." If it is, and there is some internal evidence that such is the fact—the natural conclusion would be that the principal and owner thereof has become somewhat more modest than he was two or three years ago.

At all events, if we are to judge from the lofty tone of the Catalogue the change of name cannot have resulted from degeneracy or deterioration. In proof of this we need only mention the different grades of "Undergraduates," namely: "Senior Collegiates," "Middle Collegiates," "Junior Collegiates," "Introductory Collegiates," "Senior Academics," "Middle Academics," "Junior Academics," "Senior Primary," "Lelectic."

We should like to know what university or college, male or female, American or European, can boast a larger variety of high-sounding titles for its undergraduates! The undergraduate must be very ambitious, indeed, and hard to be pleased who would wish a higher title than "Senior Collegiate," or "Senior Academic;" but which of the two is the highest grade in East Sixty-first street, is one of the many things of which we are ignorant. According to the author of Zaire, we should therefore give ourselves no trouble on the subject—

"On ne peut désirer ce qu'on ne connaît pas."

But this would ignore the existence of a strong human feeling; and the ladies, who naturally take most interest in female education, are said to be proverbial for their curiosity. However, we must regret our inability to gratify them in the present case. Nor can we tell whether the "Middle Academics" are of a higher grade than the "Middle Collegiates," or vice versa; although not only are the names of the students of the various grades given in full, but also those of their parents, or rather of one parent for each student, and to this information is added the parent's place of residence! Thus, for example, all whom it may concern are informed that Miss Angelina Smith is a "Senior Collegiate;" under the head of "Parents" we have Mrs. Sabrina Smith and under the head of "Residence," Hoboken. But it would lead us too far to enter into the intricacies of this highly interesting nomenclature; so we beg leave to change the scene, thus abruptly, passing on to the head master's "General Remarks." These commence, it will be seen, in a style quite in keeping with the titles of the different grades of "undergraduates:"

"The School, having secured a permanent location between Madison and Fourth Avenues, only a few steps from Fifth Avenue entrance to the Central Park, and the same distance from the Museum of Natural History, affords, in three connected brown stone front houses, large and pleasant accommodations for both family and day scholars." (p. 27.)

This is a pretty good specimen of the "fair speeches and fine promises" which occur in this department. Even the grammar is characteristic. So are the "few steps from Fifth Avenue," the "three connected brown-stone front houses," etc. How many "steps" are "a few?" Are 100 steps? 200 steps? 500 steps? 1000 steps? Then how much is "the same distance" as "a few?" Is it the "location" that is to be "permanent" or the school? What are the essential conditions of permanency in migratory institutions? A little further down, in the same page, we are told that—

"It is pre-eminently the aim and care of this Institution to inculcate, and to impress upon the minds of those committed to its training the principles of courtesy and discretion," etc.

One would think that it could not be very hard "to inculcate, and to impress upon the minds" of young ladies—especially on those of the "Senior Collegiates" and "Senior Academics" "the principles of courtesy and discretion." Chesterfield speaks of "the principles of politeness," but that accomplished master of ceremonies seems to have been entirely ignorant of the principles of "discretion." In short we regret to say that the logic of the Rev. Dr. Van Norman is too much like that of the dancing master in Le Bourgeois Gentilhomme:

"Maître de dan.—Tous les malheurs des hommes, tous les revers funestes dont les histoires ont remplies, les bévues des politiques, et les manquements des grands capitaines, tout cela n'est venu que faute de savoir danser."

Most cheerfully do we admit that it used not to be so in times gone by. There was a time when the "Van Norman Institute" not only issued sensible and grammatical catalogues, but gave sound, useful instruction. But alas! for the cause of education, the lady who was vice-principal then got married and went off with her husband. The present vice-principal is, no doubt, a very accomplished lady, also; but, if we may be permitted humbly to think so, she seems to give the Doctor far too much of his own way in the matter of composition, nomenclature, etc. As he claims to be quite an adept in teaching the language of Livy, suppose he be advised to study the following precept of that author:

"Fraus fidem in parvis sibi præstruit ut, quum operæ sit cum $mercede \ magna$ fallat."

Easy Lessons in Natural Science. Embracing a General Outline of the Physical Constitution and Phenomena of the World, etc. Designed for Schools and Families, by R. E. KREMER, Author of "Bible Gems." pp. 294. Philadelphia: Claxton, Remsen & Haffelfinger. 1874.

Another path of pleasantness, through whose primrose windings it is claimed that little feet may be brought easily and imperceptibly to scale the arduous heights of science!

Works of this science-made-easy class fall naturally into three ranks—narrative, dialogue, and simple question and answer; and since in this field of instruction the power to excite curiosity and stimulate the imagination is a confessed pre-requisite to success, we risk little in allowing pre-eminence to the narrative form.

That a child of ordinary aptitude, floating with Harry and Lucy along the still waters of English domestic life, may come to feel, reason, experiment and learn, with a "guide" who is also "philosopher and friend," we can all readily believe, and many of us heartily testify; and we do not hesitate to ascribe the considerable popularity of Mrs. Somerville's Dialogues to the introduction of this element of personality and location.

But why any "Outline of the Physical Constitution and Phenomena of the World" should, by being ravelled into nearly four thousand disconnected shreds of fact, become more "easy" or "simple "-(see preface), -or in any way more inviting to a child's mind, we cannot "Science simplified!"-a pleasing notion. understand. never learn that there is no such thing? We may indeed draw from the broadening web of research the gayer threads for children to play with, hoping to stimulate and give direction to their normal inquisitiveness; but this is selection, not simplification, and our prime object should be rather to develop the reasoning faculty than to distend the memory, and the pupil should never be allowed to forget that each scientific fact set before him, so far from being self-evident and final, drags a long history behind it, and has a beckoning career before it. That it has fallen to the lot of few writers to work successfully in this field need not surprise us, when note is taken of the conditions involved. while the seemingly inevitable renaissance in the elimentary text-books of to-day even, of time-honored errors and orthodox fables, is less remarkable than discouraging.

To select, and arrange in an approximately rational order, even a few of the most important facts in any branch of knowledge—constrained to avoid, on the one hand, the many statements which even now await revision, and on the other the almost involuntary infusion of one's own incredulity and prejudice, maintaining throughout a visibly presiding idea, by which the student may feel his way—is a problem of no ordinary dimensions and difficulty. And if, with many others, our author has failed of large success, the award due to honest endeavor will not be denied him.

Among the notable shortcomings of the work before us, is one fairly chargeable to the necessary brevity of the answers, namely: the enunciation of half-truths, as complete and final. Thus, in the list of the visible heavenly bodies, the author finds no place for comets. Again, the heat-conductivity of bodies is dwelt upon at some length, but we find no hint of their various heat-capacities. The motions of the earth are by

the same simplifying process reduced to two. Surely any average child could bear without injury the additional idea of the proper motion of our sun and system in space. Nay, is not the child defrauded who is led past this point, learning nothing but day and night, summer and winter?

The height of the atmosphere is given as forty-five miles, while of the widely variant results obtained by different investigators, not a word is vouchsafed. So also, the thickness of the earth's crust is stated at forty-five miles, because at that depth the temperature is presumably such as to melt all known substances, and the thirsty acolyte is left to learn from other sources of investigation which point to a much higher figure.

Our author is no friend of the new chemistry. "Heat is that which causes the sensation of warmth"—also, heat is produced by "caloric"—further, heat is produced by chemical action—"when cold water is poured upon lime." This heat existed, however, we are assured, in the substances already, in a "latent state," and lest some fortunate child should escape the memorizing of this old, misguiding nomenclature, he is told "to rub a button upon a board," when the "latent" heat in the button will become "sensible." When wood is burned, its moisture passes off in vapor, while the other parts "either rise in smoke or fall in ashes," a statement which is antithetical, if incomplete. Finally, we learn with a sense of relief, that "the nature of heat is not fully understood."

Electricity is a "subtle agency or fluid," which "may be excited by friction in amber or glass." To this somewhat meagre catalogue is subsequently added sealing-wax and the back of a cat. As in text-books of the past generation, vitreous electricity is duly credited to glass, and resinous to wax, but which we may expect from the cat is not stated. "All men sprang from Adam and Eve," and why not? "since variety of color seems to depend chiefly upon locality and climate."

"QUESTION-How is this made to appear?

"Answer-Persons inhabiting the mountains are usually fair, while others of the same nation who live in plains are very dark!"

After all, how simple is truth? "Sense of feeling and power of motion" are held to distinguish the two kingdoms, animal and vegetable. Is it not a mistake to leave a pupil under the impression that this simple definition is universally applicable? We quote Dr. Carpenter: "In the present state of science it would be difficult to lay down any definite line of demarkation between the two kingdoms. Probably the one most generally applicable is not the presence or absence of spontaneous motion, but the dependence of the being for nutrition upon organic compounds already formed."

We notice a few infelicities of expression, e. g.: Snow is a bad

385

conductor because of having air "within" its crystals. Cleoprata's needles (monoliths) are "noble structures built of granite." "An alloy is a baser metal added to a finer to increase its strength and hardness." Bronze is, then, not an alloy; but which of the two metals composing it (copper and tin) is? "Matter exists in the liquid form when its particles move freely through each other!" Sponge having large pores is a "rare" substance, i. e., not dense. "Carbon is the solid part of fuel." Among plants we find a class which "furnish clothing."

Of padding there is no lack. The *ignis fatuus* "has proved injurious to mankind by leading travellers into marshy places, where they perished." Our children will learn with interest that "boys and girls sometimes go coasting with their sleds, and make images of the snow." We are also reminded,—and it takes question and answer to do it,—that "snow is an emblem of purity."

Safety during a thunder-storm is to be sought in the middle story of the house (because the lightning may go either upward or downward, making both attic and cellar dangerous), in the middle of the room, reclining on a feather bed. "When caught in a carriage, do not lean against the sides." The jaw-bones of the whale are used as door posts. "There are swans to be seen on the Central Park ponds:" we may add, "and milestones on the Dover Road." Newton's falling apple, the apocryphal summersaults of the ibex, and the centennarian elephant do not fail to put in an appearance;—a good word is spoken for the goose, which it appears is not at all stupid, and the sorrows of a hen, which has inadvertently hatched duck's eggs, claim a passing tear.

But even the very errors of the book have a tendency to awaken an interest in the young student, and prompt him to research and investigation, while it undoubtedly contains a good deal that is instructive in itself, notwithstanding the little defects and shortcomings we have pointed out.

BIOGRAPHY.

Memoirs of Many Men and of some Women. By Maunsell B. Field. Harper & Brothers. 1874.

This book would receive a cordial reception even were its way not smoothed by Mr. Field's graceful caveat in his preface. Perhaps, indeed, he is a trifle too modest, when he disavows any pretentions to having written anything which rises even to the dignity of minor history. His account of the circumstances attending the resignation by Mr. Chase of the secretaryship of the Treasury, for example, is fairly entitled to the consideration of the future historian of our late war, and

his estimate of the character of several of the important actors in our history may very possibly be useful in the elucidation of obscure points.

In a gossipy, discursive way, without laying any claim to chronological sequence, which would be indeed tedious in a work of this nature, Mr. Field gives us anecdotes or scraps of conversations and the like about a variety of men who have made more or less noise in the world. His reminiscences are catholic; they include such opposite poles as the Duke of Wellington and Mr. Donn Piatt; and about such men as Thackeray, Macaulay, Palmerston, Earl Russell, M. Gladstone, M. Disraeli and others in England, Napoleon III., Prince Jerome, the ex-Empress, Guizot and others in France, he has something interesting His position as ad interim secretary of legation in Paris brought him into intimate relations with Mr. John T. Mason, our minister to France, and one of the authors, or at least signers of the famous Ostend manifesto and with other public men of that day; and his position during the war, first as deputy assistant treasurer in New York, and afterward as assistant secretary of the Treasury in Washington, brought him into close connection with most of the civil "makers of our history." And sprinkled in with his accounts or anecdotes of these men, are mentions or stories about authors, poets and artists, the whole furnishing pleasant enough reading for a spare afternoon or evening.

Mr. Field writes like a good talker, going lightly from one topic to another, not violently nor abrubtly, but not allowing the unities to rest heavily upon him. Most of his stories are new to us, but are exceedingly characteristic of the men. The following story of Charles Dickens bears throughout the traces of the vulgarity and lack of breeding which persons now are learning to associate with that name. Mr. Field, stopping at Cincinnati in the Spring of 1842 was informed that Dickens was to hold a levee that morning, and was invited by a friend to go to it.

"At that time I had the admiration, almost hero-worship for Dickens which was common to all young men in this country immediately after the publication of his earlier works. I therefore readily accepted the invitation, and we were soon in the presence of the distinguished novelist. There were not many persons in the room when we entered. * * Mr. Dickens was standing in front of the fireplace, with his coat-tails under his arms, gorgeously attired, and covered with velvet and jewelry. Mrs. Dickens was lounging upon a sofa at the farther end of the room. We were duly presented by an usher or master of ceremonies, and, after exchanging a few words with the author of Pickwick, retired to give place to a little Englishman, who was behind us. When being introduced, this gentleman deferentially remarked 'I had the pleasure of meeting you, Mr. Dickens at Mr. -shire, two years ago.' Dickens looked him steadily in the face for a minute and then answered in a loud voice, 'I never was there in my life. 'I beg your pardon,' replied his interlocutor, overcome with confusion, 'it was in the winter and' (naming several persons) 'were there at the same time." Dickens again gave him a withering look, and after a pause, repeated in a still more elevated tone, 'I tell you, sir, I never was there in my life.' Here Mrs. Dickens interposed, and, addressing her husband, said, 'Why, Charles, you certainly were there, and I was there with you; don't you remember the occurrence?' Mr. Dickens glared at her almost fiercely, and advancing a step or two, with his right hand raised, fairly shouted, 'I tell you, I never was there in my life.'"

Naturally enough, Mr. Field and his friend retired disgusted, and were disenchanted of their hero worship. Other men have had to learn to give up their admiration for him.

One of the most entertaining parts of Mr. Field's reminiscences is his account of the miseries to which an official of the United States in a foreign country is subjected by thoughtless and vulgar Americans travelling abroad. As we have said, Mr. Field was for a time secretary of legation to the American embassy in Paris, and this is the account he gives of his official woes, an account which even a non-official traveller or resident abroad can easily confirm:

"Hundreds of our countrymen, of proverbial modesty, who were entitled, at the utmost, to have their passports viséd, would ask of us the most unreasonable facilities and the most unheard of favors. Citizens not even accredited by letters of introduction would insist upon private audiences of the Emperor, and, no matter how politely you declined to act as the medium of their laudable ambition, they would anothermatize you and threaten to 'go for' your official head immediately after their return to America. Crack-brained inventors would ask you to do the most impossible things for them in connection with the several Departments of the Government, even to bringing them without circumlocution to the fountain of power; and your mildest protests only subjected you to contumely and abuse."

Mr. Field also speaks with, as it were, a pathetic shrug of the shoulders, of his agonies upon the occasion of a state ball, of the pestering for invitations, and the anger of those for whom he declined to do the impossible. We remember once reading in a guide book to Europe, published in New York, an urgent direction and advice to each tourist, to call upon the American official, minister or consul, of whatever city he or she might happen to visit. In our own individual travels, we faithfully disregarded this advice, and thereby, somewhat to our surprise, made ourselves the object of wondering comment. How far the practice prevails we cannot say, but in view of the fact that Americans abroad always seek Americans and Americanisms, even to the extent of buckwheat cakes and pumpkin pies, we suppose it is general. There is nothing to be gained by it, except in case of difficulty, and the amount of boring an unfortunate representative of the United States must undergo in consequence must go far to embitter what one commonly supposes to be a happy and peaceful existence. The strange gregariousness of Americans is an interesting subject of study. Can it be that it implies a lack of personal independence? The subject might be curiously wrought out in the coming intercollegiate intellectual tournament.

BELLES LETTRES.

Phineas Redux. A Novel. By Anthony Trollope. Illustrated. (pp. 255). Harper Brothers, N. Y. 1874.

THE volume before us is, we believe, number twenty-seven of Mr. Trollope's novels, which of late years have succeeded each other with astonishing rapidity. "Phineas Redux" appeared only a few days ago, and already another is in process of publication. Such fecundity is quite unexampled in literary history. Is there any limit to the productive capacity of this teeming brain? Not long ago Mr. Trollope was producing two novels at a time. May we not look for triplets next?

While George Eliott is meditating a plot for one of her stories, Trollope will have written, published, and been paid for two or three. Of course so enormous a yield of mental product cannot be of a substantial and enduring quality. These books are pictures of English upper middle-class life, clever and discursive, but always superficial; in fact the very apotheosis of commonplace.

A certain good-natured common sense and sturdy optimism pervades them. They show a general knowledge of the world, of men and women, of society, of manners, but not of man. The author, with great technical skill, is no artist, but an expert photographer, who takes for us many pictures of faces and costume, but paints no portraits which are "the shape and color of a mind and life."

Now, photography is a very good thing in its way, but it is not one of the fine arts. But we ought not to complain of what is natural and inevitable. We must not expect too much for four pence. If the author is satisfied the reader should be, and vice versa. The old proverb—"What will you have? pay for it and take it," is pertinent bere.

Mr. Trollope has what he bargains for, and so do his multitudinous admirers. For, though without wit, or humor, or imagination, or insight, he is always readable. His style is easy and pleasant, and his matter sufficiently interesting. Though superficial, he is never stupid, but cheerfully entertains us with the society of highly respectable persons. Dukes and duchesses, earls and countesses, M. P.'s and prime ministers, to say nothing of lawyers and clergymen, greet us familiarly on every page. We feel somehow that we are almost living at court.

Then, too, Mr. Trollope is so candid with us. For example, in the present story, honestly conscious of his inability to construct a plot, whose devices shall deceive our judgment, or even hold it in suspense, he takes us quietly aside and uses the following language with regard to a charge of murder against his hero:

"The reader need hardly be told that, as regards this great offense, Phineas Finn was as white as snow. The maintenance of any doubt on that matter, were

it even desirable to maintain a doubt, would be altogether beyond the doubt of the present writer. The reader has probably perceived, from the first moment of the discovery of the body on the steps at the end of the passage, that Mr. Bonteen had been killed by that ingenious gentleman, the Reverend Mr. Emilius, who found it worth his while to take the step, with the view of suppressing his enemies' evidence as to his former marriage," etc., etc. (p. 159.)

This engaging frankness, which at once declines to attempt a difficulty, and compliments our discernment, while taking us into flattering confidence, is not without its seemingly contradictory effect of heightening the verisimilitude of the story. We take our leave of Mr. Trollope for the present by remarking, that he emphasizes trifles to a degree that is almost painful. He puts his stern microscopic eyes over everything presented. Afraid to risk a mere hint, he elaborates every description.

As to moral tone, we may safely assert that in all his books—in spite of occasional passages of almost vulgar jocularity—there is really nothing that Mr. Podsnap could rightly object to as "calculated to bring a blush to the cheek of the young person." We would not, therefore, discourage any one from reading "Phineas Redux," and we readily admit that it is more entertaining than three-fourths of the novels written and published at the present day.

The Lost Beauties of the English Language. An appeal to authors, poets, clergymen and public speakers. By Charles Mackay, LL.D. (pp. 288). New York: J. W. Bouton. 1874.

DR. MACKAY is an old acquaintance, as a versifier—we can hardly say poet—a compiler of "elegant extracts," an author of books of travel, and littérateur in general, but in the department of philology we have never met him before. The introduction, which contains nothing new, that is true, and nothing specially absurd or harmful, is a statement of the fact well-known, and in no wise lamentable, that many English words, once in good use, are now obsolete or obsolescent, and it is argued or implied that all, or most of these, ought to have been retained, and may yet be recovered and replaced, if literary men will only agree to introduce them in their writings.

Poets, especially, are earnestly appealed to to take the matter in hand, and give, we suppose, "a long pull, and a strong pull, and a pull all together," in the direction indicated. The writer argues that the permissible rhymes in the language are not very abundant, and that by this artificial process their number may be increased!

Accordingly, on page 64, he gives the word *flath*, meaning filth, dirt, ordure (Halliwell), and adds: "The rhymes to "wrath" and "path" are few, and this might be admitted to increase the number." Hardly sat rationis, we should say. Dr. Mackay forgets that language is a

growth, not a thing manufactured to order. The factors of language, the influences which reject and adopt, that mould, qualify and determine words and their uses are so multitudinous and complex, so subtle, delicate, arbitrary and elusive of definition, as to put them beyond the direct reach of active conservatism or reform. Words are for use. They must stand for something that exists or is imagined to exist.

If the thing named by a particular word ceases to exist, or the given word ceases to reproduce or suggest the given thing to the mind, then the word will drop, first out of current speech, and soon out of current literature. Such a loss of words is a thing neither to be prevented, nor, begging the Dr.'s pardon, to be regretted. Words never meet a violent death; they die naturally. If, indeed, as he affirms, many archaic words "are not dead, but sleeping," and if they really express something worth expressing, which must without them remain unexpressed, they may of course be employed.

Especially would this be true of words, whose "sound is an echo of the sense." Take, for example, the word "clump," to walk heavily and awkwardly; whence clumsy; we might say of a hulking gawky that "he came clumping along," and our meaning could hardly fail to be understood, because the term is onomatopoetic. Thus useful words may be incidentally rescued from disuse, but not on principle, and of set purpose. The poet Tennyson, in his earlier verses, introduced a number of obsolete words, and with a measure of success, but (except in the "Idylls of the King," when old words suited the old legends) he has of late years found the modern vocabulary quite adequate to his needs.

Now, to insist with our author, that it would be worth while, or even possible, to disinter and rehabilitate such words as "allwholly," meaning entirely, "bedgang," meaning acconchment, "blate," meaning cold, insipid, bashful, modest, shy; (by the way, which of these meanings should we adopt?)—to attempt to use "busk" for dress; "nim" for take, "dab" for dexterous; "dodder" for totter; "leuch" for laughed; "hext" for highest; and so forth, to the number of thousands—we say to attempt to revive these "lost beauties" (?) seems to us so very absurd that we will not discuss it further.

No such process was ever successfully applied to language. There is really no loss in language; what is best, what is worth saying, is always said. *Usus norma loquendi* was always as true, and is as true today as when Horace wrote it.

"Whatever is, is right," is as sound an axiom concerning language as concerning the government of God, or the laws of nature. We thank Dr. Mackay for his catalogue of archaisms, which would have been better if he had omitted many words that do not belong there, being still in constant use; had he included many words that do belong there, and spared us his sentimental sorrow over deceased words; and his

pathetic appeal for concerted effort among literary men to galvanize them back into life. The book is well meant, no doubt, but inadequate and quite unnecessary.

It has no raison d'tère. The title is a misnomer, of course, but then, if the volume had been simply described as an "Archaic Glossary, with illustrated passages," the intelligent reader of its announcement would have at once bethought him of Wright's Glossary, and Halliwell's, and Nare's, and have wondered in what respect the new compilation supplemented those excellent works—accordingly the book is heralded as "Lost Beauties and Perishing Graces of the English Language!" Now, leaving out the question of good taste, we think this a mistake, even from a commercial point of view. It is not at all a "taking title," but sounds elaborately dolorous.

MUSIC.

Clark's New Method for the Piano. Embracing all the latest Improvements in the Technics of the Instrument; an Exhaustive Analysis of the Scales and Chords, and a carefully selected series of Studies from the greatest Masters. By Hugh A. Clarke. Large 4to., pp. 256. Philadelphia: Lee & Walker.

The title page here copied is highly laudatory, but we cheerfully admit that the work has abundant merits to justify even its author's enthusiastic estimate. Those of our musical friends who are best qualified to form an opinion on the subject, pronounce it greatly superior to the "New Method for the Piano," published at Boston. But the latter should now be rather called the "Old Method," for it is proper to say that it is much behind the time in several essential particulars; although constantly advertised as "New," thereby deceiving many who cannot afford to lose their money.

Among the new features which the work before us contains, are the fingering of scales in double thirds, the appeggios in use in the Liepsig Conservatory, and the introduction of five finger exercises. The selections embrace a wide range and present an extensive variety, including as they do, some of the happiest moreaux of composers like Bertini, Cramer, Schumann, Heller, Mayer, Concone and Kullak. Indeed in no similar work have we found so many veritable gems.

Junior students and beginners will find the vocabulary at the end of the work worth a good part of its price. It contains the Italian, French, and German words and phrases used in piano music, all rendered into plain English. To these remarks we need hardly add that we confidently recommend Clarke's "New Method," as a work worthy of a place in every school, as well as in every family, where music is taught or studied.

- Mother Bear me to the Window. Song and Chorus. Written and composed by James Bayman.
- Bird of Dawn. Duett. Words by George Cooper. Music by Charles E. Pratt.
- 3. Donna Ada's Polka, for the Piano Forte. By T. M. BROWN.
- 4. Tribute Quick Step. Composed by C. S. GRAFULLA.

New York: Wm. A. Pond & Co.

The titles of these pieces are more modest than ambitious, but they will not be found the less pleasing on this account. The Messrs. Pond & Co. have an extensive repertoire; none of our music publishers evince more taste and judgment in selecting the pieces on which they set their imprint, and the above five have each become favorites to a greater or less extent among amateurs who have confessedly a delicate touch and an accurate, faithful ear. This is particularly true of the "Bird of Dawn," and "Donna Ada's Polka;" the latter of which reminds us of Keat's, "Ode on a Grecian Urn," especially of the lines—

"Heard melodies are sweet, but those unheard
Are sweeter; therefore, ye soft pipes, play on;
Not to the sensual ear, but more endeared
Pipe to the spirit ditties of no tones."

The musical critic of the National Quarterly will take pleasure in indicating, from time to time, such pieces issued by leading publishers as seem most successful in combining melody and sweetness with facility of execution; qualities which the above will be found to possess in a high degree, unpretending as they are in their titles.

- Universal Library. Third Series: A Collection of Pieces from the best European Authors.—La Triomphe, Grande Valse Brillante.
- Twinkling Stars. Six Little Pieces for Beginners. By Henry May-Lath.
- Qui Và La. Grand Galop de Concert; a companion to Qui Vive Galop. Composed for four hands by Jонк P. Sтоскток, Jr.
- Evangeline; Valse Redova. By Giovanni Godone. Arranged for four hands, by H. Maylath.

- A Collection of Standard Gems simplified for the Piano. By Henry Maylath. Pure as Snow.
- 6. Gems from the Ball Room. Azalien Polka Mazurka.

New York: S. T. GORDON & SON.

Mr. Gordon has made his "Universal Library" somewhat famous. It is generally admitted that no other collection published in this country includes more choice pieces. The "Collection of Standard Gems," also bearing his imprint, is similarly distinguished. Suffice it for us to say of this, that the "gems" are genuine. This is true, for example, of "Pure as Snow," the piece of the collection now before us.

Nor would we have the amateur overlook either Qui va la, or "Evangeline." "The Twinkling Stars," will be found by teachers of beginners, and in due time by the beginners themselves, to be quite worthy of the name. They are at once easily learned, tender, sweet; in short, to use the phrase of Wordsworth, in his Morning Exercise, "instinct with music."

We are quite aware that most periodical editors in this country regard the issues of the musical press as beneath their notice. But we do not consider this any reason why we should regard them in the same light. Nothing is beneath our notice that contributes to cultivate and refine the mind; and that music exercises this influence no intelligent person would venture to deny at the present day. Accordingly the ablest and most learned of the literary journals of France, Italy and Germany always condescend to devote more or less attention to musical publications.

Nor is this habit by any means a novelty. Nearly a century ago it was practised in France by the most eminent literary critics. This is true, for example, of La Harpe, who gave his opinions freely on musical publications in his Journal de la Littérature. His wordy battle with Gluck, the composer, is one of the most interesting reminiscences of that period. La Harpe treated his readers to a criticism on Gluck's Armide, as he had a perfect right to do. Gluck replied in an angry and rather abusive letter; La Harpe made some further criticisms which increased the indignation of the composer. From prose the combatants betook themselves to verse; and there remain three stanzas of La Harpe's verses, and two of Gluck's which may well be regarded as curiosities of literature. The chief point in each is that the writer is wearied with the dull performances of his antagonist. Thus, in his first stanza, La Harpe says:

"Je fais, monsieur, beaucoup de cas De cette science infinie Que, malgré votre modestie, Vous étalez aver fracas, Sur le genre de l'harmonie Qui convient à nos opéras Mais tout cela n'empéche pas Que votre Armide ne m'emuie," To which Gluck replies, as follows:

"J'ai toujours fait assez de cas,
D'une savante symphonie,
D'ou résultait une harmonie
Sans effort et sans embarras.
De ces instruments hauts et bas,
Quand chacun fait bien sa partie,
L'ensemble ne me déplait jas;
Mais ma foi la Hurpe m'ennuie."

That Gluck had some wit in his head as well as melody, was sufficiently evident from this conflict, but probably he showed his wit best in admitting at the eleventh hour that after all the critic was right and he was wrong.

Be this as it may, we mean to have our eyes in future on those music publishers who, while they assume airs of respectability and honor, not only call their old methods "New Methods," etc., but also advertise their first and only edition as sixth edition, eighth edition, tenth edition, etc.

APPENDIX-INSURANCE: GOOD, BAD, AND INDIFFERENT.

Annual Statements of Insurance Companies. New York, Boston, Philadelphia, Hartford, etc. 1874.

To those bearing in mind certain events and characters, it may seem a paradox to say that the public may well regret how much the prestige of life insurance has fallen; such, however, is really the fact. But the large majority would require an explanation just now. Nor is it difficult to give one; to the thoughtful mind, a dozen will readily suggest themselves. The following will answer our purpose as well as any other: Take any one of our large cities, and think for a moment what a number of persons it contains who call themselves physicians. In New York there are, on a moderate calculation, from 700 to 1,000. Nine tenths of these know very little about medicine. Nay, it is no exaggeration to say that this proportion kill more than they cure.

The thoroughly educated, experienced, skilful physicians who really alleviate human suffering and wrest many from the very jaws of death, are exceedingly few; certainly not more than a dozen out of the above thousand. Now these dozen are by no means the wealthiest; it is not they that have the most elegant houses or the finest carriages; nor is it they who exhibit the largest diamonds. On the contrary, they are, in general, the men who, above all others, are least fond of display. It is not for houses, carriages, or diamonds they value themselves, but for their skill and knowledge, for the amount of good they do, for their

power to subdue disease and ward off death as long as human agency can do so.

Upon the other hand, it is those who have least knowledge and least skill—those who, in fact, are absolutely destitute of both—that make most display, and are loudest and noisiest in their pretentions. Besides those quack doctors whose chief business it is to manufacture drugs which they claim to be universal specifics—elixirs and balms which can never fail if the patient will only swallow a sufficient quantity of them—there are others who prowl about in private, calling themselves "regular practitioners," and who rarely give a prescription which does not do much more harm than good. In short, nothing is more certain than that it is those who make the loudest promises, and who claim to have made the most recent discoveries in medicine, or to have introduced the "newest features" into the healing art, that do most mischief—in a word, kill most.

It is not strange, then, that we read in the histories of all civilized nations, ancient as well as modern, of whole communities coming to the conclusion that physicians are of no use; that they do more harm than good, and that of course it is better, therefore, to do without them altogether. Now, this is the sense in which we have said above that the public has reason to regret having arrived at a conclusion so adverse to life insurance. It is just as true that we have honest, faithful underwriters who shield from poverty and its consequences thousands of widows and orphans entrusted, in a certain sense, to their charge, as it is that we have educated, experienced, and skilful physicians who not only relieve human suffering, or remove it altogether in innumerable instances, but save the lives of thousands. Then, if this be admittedand no one can deny it without incurring the charge of ignorance. thoughtlessness, or wilful misrepresentatation-it must also be admitted that it is as absurd and foolish to condemn all underwriters because many claiming to be underwriters have behaved more like sharpers or swindlers than like honest men, as it would be to condemn all physicians because the large majority of those claiming to be physicians kill more than they cure.

Many a time have we urged in these pages that thousands would have cause to repent, as they now do, if they did not exercise discrimination in insuring their lives. At no time have we shrunk from warning the public against the machinations of precisely those classes of underwriters who promised most and made most display; nor have we excepted those who build the largest "palaces" whether the latter are composed of white marble, granite, iron or brass. We have said again and again, that of all the English companies that had failed and robbed as far as they had it in their power, all who put faith in their "fair speeches and fine promises," none had built more imposing or more expensive structures than those who distinguished themselves most at this sort of

work. We have shown repeatedly that it was the latter class that were most in a hurry to erect showy buildings—buildings the sumptuousness and magnificence of which would have the effect of securing the confidence of the credulous long enough to fill the coffers of their owners. Nor did we omit, in giving these warnings, to show that there were American underwriters who pursued exactly the same course.

Upon the other hand we did not fail to show that there were no American companies that transacted their business in more modest buildings than those most proverbial at home and abroad for their integrity! As examples of this class we have more than once mentioned the Phænix Mutual of Hartford, the New England Mutual of Boston, and the Manhattan of our own city; and we may remark now in passing that these are to the great majority of our life insurance companies just what our experienced, skilful, faithful physicians are to the hundreds of mountebanks and human butchers who call themselves physicians.

There are many marks by which the spurious brood of "benefactors" may be distinguished, and there are many grades of them. We have fully portrayed the different species, as well as the genus, from time to time. But it may be remembered that at no time have we maintained that insurance companies are to be judged according to the amount of their "assets," even when the latter are real, not imaginary. Millions are easily set down in figures; the most ignorant class have learning enough to multiply a million, or half a million, by five, eight, ten, nay twenty. Then need we say that those who would deliberately cheat the widow and the orphan would as deliberately swear that their \$1,000 is \$1,000,000, or, if that seems better, \$10,000,000.

But let us assume that the money really exists—say about one-third the amount advertised. None are more purse-proud or more pompous than those who have made their money chiefly or wholly by fraud and misrepresentation. The grand dukes of Italy in their palmiest days, the doges of Venice, or the petty princes of Germany, were modest and unpretending, compared to our insurance nabobs; and 'tis but natural that none are more arrogant, or more tyrannical to those in their power than those who betook themselves to insuring the lives of others while they were not able to pay their board, and while their character was so defective that no business man who knew them would trust them to the amount of one dollar.

No class has derived more aid from the press than this: no class is so much indebted to the press. Editors, like other men, are often deceived. It may be more difficult to impose upon them in general than on men engaged in pursuits in which the reasoning faculties are not called into play as much as they are in editing. Persons constantly in the habit of comparing facts with each other—persons a prominent part of whose duty it is to deduce conclusions from premises more or less obscure—are apt to be more wary, more skeptical than others. But ac-

cordingly stronger efforts are made to deceive them; and being deceived —led to believe that the mere semblance of honesty is the genuine virtue—they proceed to proclaim that the brass or pot-metal is gold until they enrich those who took so much pains, not only to throw dust in their eyes, but also to awaken their enthusiasm in favor of "the good work." It can hardly be regarded as strange that none are more ready to insult them than those whom they have thus raised up in the world, and enabled to build grand palaces at the public expense. A curious illustration of this was given by the Chamber of Life Insurance at its meeting of January 27th. From three resolutions which that body thought proper to pass in regard to the press we extract the following:

"Resolved, That if any journal, whether belonging to the insurance or the general press, shall attack any company, a member of this Chamber, on account of its action in disposing of its advertising patronage, all other companies, members of the Chamber, will withdraw their advertisements from such journal."

The obvious meaning of this is, that any one who ventures to criticise the action of any company belonging to the Chamber is to be regarded as having made an "attack" upon it; and it follows from the same logic that to "attack" is to show malice, the cause of the latter being that the attacked company has withheld "its patronage" in this particular instance! What an outcry there would be if the press made a similar threat against the Chamber of Life Insurance! All editors would then be "black mailers," so far as it was deemed safe to say so. But there are several companies nominally belonging to the Chamber which it would be unjust to hold responsible for the above "resolution," or any such foolish, silly thing. It should be understood that three or four individuals control the Chamber, and these are the individuals who have most to fear from "attacks," conscious as they are that their "statements" contain but a slight amount of the element of truth. Thus, for example, who would wonder at the wish of F. S. Winston, of the Mutual, to gag the press? Then we have Batterson, of the Traveller's Life, in the Chamber; also Freeman, of the Globe Mutual; Bouck, of the Brooklyn Life; White, of the Charter Oak Life; Enders, of the Etna Life; Goodwin, of the Connecticut Life, etc.

There is not one of these who has not good reason to feel a little shy of the press. Mr. Hyde, of the Equitable, used to know better; at least, he used to act more judiciously. But now, it seems, he is entirely converted to the views of Winston, Batterson, White, Bouck, et hoc genus omne.

Upon the other hand there are, as we have already intimated, a few companies nominally belonging to the Chamber who take little or no part in its proceedings; if they ever do take any active part it is certainly not the part of making threats, or the part of trying to conceal what they are doing from their policy-holders. This is eminently true, for example, of the New England Mutual. If the President of this com-

pany has taken any part whatever in the proceedings of the Chamber, it has been a very different part from that of which the above serves as a specimen; nay, we are convinced that Mr. Stevens would not long continue to belong to any chamber, cabal, or clique that had no better sense than to render itself thus ridiculous. The same may be said, we believe, of the officers of the New York Continental. We also believe that Mr. Morgan, of the North America, has more sense and more manliness than to be found voting in favor of any such "resolution." But there is scarcely anything the rest could do that would surprise us, excepting Mr. Hyde, Mr. Enders, and Mr. Wetmore, who, until they became demoralized by "evil communications," were good and true men.

At the date of the above resolution twenty-three companies were officially announced as belonging to the Chamber. Of this number we had implicit faith only in three; and nothing has occurred since to enlarge our faith. It is a curious commentary on the lofty pretentions of that body that since they passed their famous "resolutions," two of the allied companies have either ceased to exist altogether, or are now in the throes of dissolution—we mean the Guardian Mutual and the Government Security. We may remark parenthetically that we are sorry for the Guardian, which deserved a better fate, since it always meant well, and often did well. We wish we could say the same of the Government Security, but we have never heard a good or creditable act ascribed to that concern except by the insurance puffers, who, for obvious reasons, praise those most that deserve most censure. At all events it was in vain that both joined the Chamber; and we could mention several other companies that will have a similar story to tell before long.

We have given the Guardian credit for having often meant and done well; but it certainly did not do well in its last moments, no matter how well it meant, if it be true that the company to whose care it has transferred its policy-holders is the so-called Universal Life. This company also belongs to the Chamber. If the Chamber were an hospital, as some call it—at least, if it were an hospital whose chief acting physicians had some knowledge of the healing art—the Universal, like the Globe, etc., ought to be commended for entering its wards. But as the case stands, we can only say, alas! for the policy-holders of the Guardian!

So far as we have learned, the Manhattan Life, the Phœnix Mutual, and the Mutual Benefit persistently decline to have any connection with the Chamber. We are assured that none of them have any faith in the wonderful virtues which that concern is said to possess, and which it is claimed will continue to increase in geometrical proportion as it waxes old. The truth is that the officers of these three companies know too much about the chief actors in the Chamber; and we learn that they are as fully convinced as ourselves that if the officers of the New England

Mutual, the New York Continental, and the North America, knew the same party, and their real motive in getting up the Chamber, they would not continue members for one week. In short, we are informed on good authority that when the President of the New England Mutual returns from the South, where he is on a tour of visitation among his agencies, he will either politely resign his position in the Chamber, or without any formal resignation, persist in keeping aloof from that wise, upright, and doughty conclave. Be this as it may, our readers see that we are not much frightened by the threat we have quoted, but give our opinions just as freely as ever. Nor shall we cease to do so as long as we are able to use our pen, let the patronage go as it may. Thanks to the most intelligent classes of the American people, we are not now, and never have been, dependent on any clique or cabal, and trust we never shall be. Not that we would say one depreciatory word of the great underwriters of America who are worthy of the name, or deny that there are amongst them gentlemen of intelligence and honor who would have adorned any calling or profession.

We have been in no hurry to refer to the termination of the war between Winston and his former henchman. How disgraceful that war was is notorious. But this we looked upon, it will be remembered, as just what was to have been expected from both the combatants. It may be remembered, also, that we predicted more than once that Winston and English would one day prove their worthiness to be compared to the strolling tinkers of Europe, who to-day batter and abuse each other, and to-morrow are as intimate as pickpockets! It was, therefore, no surprise to us that the journal which for a whole year or more was devoted almost exclusively to abuse of Winston, charging him with nearly all sorts of crimes, the same as it had been devoted for several years previously to the most fulsome praise and adulation of the same personageascribing to him all the virtues of the saints-it was, we say, no surprise to find that all of a sudden Winston and English were again friends, at least as much friends as such persons can ever be to each other. Winston had not taken into account, when he fell out with his retainer to what extent he had revealed his secrets to the latter without at all meaning to do so. Now the main question is, How much did English get for saying no more about the dirty work?

The Baltimore Underwriter, always one of the best informed and most independent of the insurance journals, has the following comments on this precious matter. Referring to the sudden termination of the war of dirt-throwing, the Underwriter proceeds:

"It has provoked criticisms and conclusions which are anything but complimentary to the parties concerned in the compromise. For it is very evident that nothing but compromise could have stopped the cannonading of the Ludlow street martyr. How or by whom this silence was purchased, or what price was paid, we presume will always be as much of a mystery as the song which the syrens sang. The impression appears to be that the Chamber of Life Insurance was the high

contracting party which furnished the 'hush money.' Whether such inference be correct or not, it is very certain, in view of this disgraceful affair, that the reputable journals owe it to their own self-respect to inquire more closely into the character of the company they are keeping, and to ascertain whether, after all, the best method of earning and deserving the patronage of the companies is by a system of sweeping and wholesale blackmailing."

Another Baltimore paper (The Enquirer) has undertaken to "vindicate" Winston, and in doing so it throws out some hints in regard to other parties, but pretends to regard these hints as preposterous! Alluding to the report that it was the Equitable or the Chamber of Life Insurance that furnished the hush money, the Enquirer asks:

"Why should either pay \$35,000 to English? Mr. Winston might have compromised the slander and imprisonment suits and paid the award of arbitration, without loss of personal character and without suspicion of official corruption. But why the Equitable or the Chamber of Life Insurance should be so pliant as to pay \$35,000 for Mr. Winston's benefit, is 'one of those things no fellow can find out.' And while the 'David and Jonathan' relation of the Equitable and Mutual has excited much comment and provoked some criticism, yet to suppose Mr. Hyde so effectually beaten in the late quarrel as to be ready to pay \$35,000 for future peace, is preposterous."

It is a good joke to speak of Mr. Winston's doing anything "without loss of personal character," and as for "suspicion of official corruption," that, of course, is out of the question! But that he should make a cat's paw of our friend Hyde is too bad. However, let us quote another orthodox authority. It affords us pleasure to give the "Monitor" credit for great improvement in the matter of independence. Indeed, since it came into the hands of its present editor, that journal has done much to elevate the character of the insurance press. Referring to the famous, or rather infamous, compromise, the "Monitor" says:

"We interviewed Mr. Hyde and Mr. Heald, and called four times to see Mr. Beers. The latter gentleman was out of town, and all we could get from the others was, "Shhh, don't say anything; keep perfectly quiet. If you are a friend to life insurance, don't say a word about it. It is all right—shhh now. I tell you it is all right, and perfectly honorable to both parties; but you mustn't say anything."

Alas, poor Hyde! Has it, indeed, come to this? As for Beers, if we heard anything better of him than that he skulked we confess we should rather be surprised. What of Mr. Wetmore of the Security Life? Has nobody interviewed him in regard to the matter? But it seems that \$2,500 he gave George W. Miller to make things go smoothly at Albany was enough for him for some years to come. Up to the time that amount was withdrawn from its "assets" the Security seemed a very secure concern, but we regret to add that, so far as we can judge, it has never been the same since, and, what is worse, we fear it is not likely to improve much in the future. We do not hesitate, therefore, to acquit Mr. Wetmore and the Security Life of all complicity in the hush money affair which has had the happy effect of again reconciling to each other two such distinguished and worthy persons. To this we need only add

that, if there were any so credulous as to believe Winston innocent of the charges made against him, their eyes must, we think, be opened by this time. What will the policy-holders of the Mutual Life say now? What will the public say? Is it strange that the prestige of Life Insurance is gone?

In the meantime there must be something fearfully rotten in Brooklyn, if not in Denmark, for we have counted in the "Insurance Times" for February no fewer than seven different puffs of the Brooklyn Life, and puff No. 1 fills the first page of that veracious journal, making three full columns. The others are scattered about from page 106 to page 149, inclusive. This is exactly the manner in which the same journal used to bedaub Winston for years. Bouck may well be proud, but, we think, the policy-holders of the Brooklyn Life may well indulge a very different feeling, and ask Bouck what is all this white-washing for?

We are here remindedof the National Life of New York. the time this company retired from the field it owed us \$100 for its last advertisement. We have never asked this, further than to send in our bill, as usual, before hearing of the retirement. Nor did we intend ever asking it on learning that the company was in the hands of a receiver. But we soon found it was not necessary for us to do so. The receiver wrote to inquire what proportion of our claim would satisfy us. We replied that any proportion he deemed fair, under the circumstances, would be entirely satisfactory to us; and the result was that we received every penny due us. We cannot but regard this as an interesting instance of "the ruling passion strong in death;" for the New York National was always scrupulously faithful to its engagements. We do not know by whom was Mr. Eli Thayer appointed receiver. We have never spoken to that gentleman; to our knowledge we have never seen him; but that he has acted in strict accordance with the honorable principles by which the managers of that company were always actuated is a fact to which we can bear emphatic testimony. The company to which the interests of the policy-holders of the National have been entrusted by its officers is the American Life, of New Haven; and the New York branch of the latter has been placed in the hands of the secretary of the former, Mr. J. A. Mortimore, a gentleman in every way qualified for the position, and in whose integrity and fidelity the policyholders of both companies may place implicit confidence.

But it is time that we illustrate more particularly our views in comparing true life underwriters to true physicians. To begin at home, we can find no better specimen than the Manhattan Life. Referring to its annual dividends, and other substantial advantages offered to policy-holders, the Manhattan mentions facts, as follows, of which any company might well be proud:

"The first consideration in this Company has been to secure the certainty of the payment of the sum assured at death, and next to reduce the cost as much as pos-

sible. That these considerations have been successfully accomplished is shown in the facts that this Company has now been for over twenty years in successful existence, having, on claims by death, paid mainly to Widows and Orphans, over \$4,000,000, and in Dividends, \$3,000,000, and now has an accumulation of over \$7,600,000, and a surplus of over \$1,500,000, over and above liabilities. The Directors call attention particularly to these facts regarding this Company, as owing to the winding up of some weak companies, some distrust has arisen in the minds of those who have had, heretofore, entire confidence in the security offered by Life Insurance to families."

Unfavorable as the past year was it enabled the Manhattan to present a handsome record. Its income for 1873 is summed up thus:

"For	Premiums, Extra Premiums, &c	\$1,596,318 27
For	Interest	531,752 78
For	interest, &c., accrued	265,101 10

\$2,393,172 06."

Its disbursements have been large, but of the right, encouraging kind. They include no "hush money," no drafts from a bribery fund. The following terms speak for themselves:

"Paid for Claims by death on Policies and payme of annuities	\$679,187 16
Policies, and Interest on Dividend	
Total Amount returned to Policy-holders Paid for Expenses, Salaries, Taxes, Revenue Stam	
Medical Examiners' Fees and Commissions	

\$1,486,937 28."

The reader will observe the amount returned to policy-holders, and then bear in mind that the Company's gross assets exceed nine millions (\$9,009,462.33), while its undivided surplus is more than a million and a half (\$1,666,626.95). This shows a much better condition of things than that of those bribing, compromising, quibbling, flashy companies that boast of having assets more than twice as large, but the real value of whose boasting is now pretty well understood by the public.

We have more than once compared the Phœnix Mutual, of Hartford, with the Manhattan, and we are glad to say that the comparison holds good still. It is a fact worthy of remark that the former is the only Hartford life company whose prestige has not been lowered in some way or other within the last four or five years; to speak more unequivocally, it is the only Hartford company whose reputation has not suffered. Next to the Phœnix the Charter Oak held out best in this respect. Indeed, while the latter was managed by Mr. Walkley, there was no more honorable company; nor was there any safer company. But for some two or three years past it has been managed, or rather mismanaged by Mr. White, its present vice-president, and the results of his modus operandi are presenting themselves in various forms more or less ugly. The following

account of one of its suits, which we extract from the Insurance Spectator for March, will serve as a specimen:

"On the 6th of May, 1853, a policy of \$5,000 was issued by the Charter Oak Life Insurance Company, of Hartford, on the life of J. W. Smith, for the benefit of his wife. The premium was \$104 per annum. The premiums were regularly paid up to the 6th of May, 1861, and the premium due on that day was tendered and refused, and the company has since refused to receive the annual premiums and has declared the policy void. The answer of the company alleges a breach of the conditions of the policy, in that Smith voluntarily entered the Confederate service without the consent of the Company, and that he has become so intemperate as to impair his health; there is also a plea of the statute of limitations.

"The case was tried before a jury in special term, and it was proved that the premiums were promptly paid to May 6, 18'1, and on that day the amount was tendered by a brother of Smith to the agent of the Company at Lynchburg, Va.; that the agent hesitated about receiving the money, because the civil war existed, and he was cut off from communication with the Company; that he received it, however, conditionally, but returned it on the 14th of March, 1872, the agent stating that he had been unable to communicate with the company. Smith testified that he volunteered in the Confederate service in November, 1861, and served until 1863. It was proved that Smith was in good health, and not addicted to intemperance."

Those whose lives are insured are accused, by certain companies, of intemperance and, if possible, still worse vices, after their death, on the same principle that editors who criticise are accused of malice, spite, etc. This is the sort of insurance which Southerners designate "iron clad,"-a species of the article in which it will be remembered the New York Life seemed for some time to enjoy a monopoly. But the thing has failed this time in the case of the Charter Oak, for both judge and jury were of opinion that the company should be made We are told that "large oaks from little acorns spring," but if ever an oak, large or small, dwindled back to the acorn state, such a phenomenon may be witnessed in Hartford before many years, under the wise auspices of Mr. S. H. White. Like many others of about the same calibre, Mr. White used to do very well while he was secretary, his most important duties then consisting in writing puffs of the Charter Oak, in questionable English, for the country newspapers. But promoted to the rank and pay of vice-president, as a reward for his skill in that sort of thing, and allowed to take Mr. Walkley's place in the management of the company, he is determined to make his mark, and he has already succeeded in making several-such as that noted above!

But to return to the Hartford Phœnix Mutual. As one true physician is better than a score of quacks in accordance with the proposition we have laid down at the beginning of this article, so is the Phœnix, without any exaggeration, better than a score of those companies which, in nine cases out of ten, have some reason or other to refuse payment until compelled to pay. Instead of any "iron clad" record like the above, the Phœnix show that only three companies in America did more busi-

ness than it in 1873. A comparison of its own business for the two past years exhibits the following results:

Income.	Dividends paid Policy-holders.	Losses by Death.	Net Assets.
1872\$3,413,752 45	\$943,441 71	\$831,116 32	\$8,209,3 5 07
1873 3,521,240 57	1,070,455 43	932,534 75	9,074,861 34

None need be reminded of what 1873 was in a business point of view, and no business suffered more than that of insurance. Yet the Phoenix Mutual, instead of falling behind, increased its income, increased its dividends, and increased its assets, after paying nearly a million to widows and orphans. Add to this the fact that it commenced 1874 with a surplus, free of all liabilities, of \$875,000, and it will be admitted that it is no mere figure of speech to regard the Phoenix as a true physician. It may be that the Charter Oak, the Ætna, the Connecticut Mutual, and the Traveller's have more money than the Phoenix; but if they have—which may safely be doubted—it is certain that they do not possess, between them, one tenth of the honesty, judgment, and sound common sense of that energetic, solid institution.

Many regard it as not a little strange, that, while Boston can justly boast of excellent institutions in every other department in which success depends chiefly on intelligence and intellectual effort, it has only one Insurance Company worthy of the name. It is needless to say that this one is the New England Mutual; but it is really worth a dozen for the good it accomplishes. Our readers are aware that we do not belong to the class of "foreigners" who would disparage Boston or Massachusetts. None belonging to that city or state appreciate more fully the truly excellent characteristics of its people. Far from denying that New Englanders in general have many sterling qualities, we have always taken pleasure in bearing testimony to those qualities. Nor have we entertained this feeling without good reason-it is the result of the observation and experience of many years—observation and experience illustrated by extensive personal intercourse. In a word, none think more highly than we of the intelligence, talent, energy, industry and general probity of New Englanders; and for more than a dozen years we have regarded the New England Mutual Life as worthy, in every respect, to represent such a people. It is with sincere pleasure, therefore, that we find in the Thirtieth Annual Report of that Company ample evidences of its continued prosperity, in spite of panics and "hard times." The following extract explains itself; we quote it because we think that no true friend of the cause of the widow and orphan can be indifferent to the success of a Company like the New England Mutual:

"The receipts for the year have been, from all sources, \$3,288,689.54, and the payments, which inclu'e death claims, matured endowments, returned premiums on cancelled and surrendered policies, interest paid for advance on investments over the par value, and taxes and expenses of every kind, have amounted to \$1,569,682.11.

Deduct the death claims due within thirty days, \$115,777, and the actual gain for the year is \$1,719,007.48.

ing obligation, were \$12,229,380.77. The present value of the Company's future liabilities upon 21,854 policies, on which the amount insured is about \$65,000,000, has been carefully computed by our Actuary, Mr. Walter C. Wright, and the sum of \$21,647,860.77 set aside as the actual capital with which to commence the year 1874. The market value of the securities is \$289,343.01 more than the amount at which they stand upon the books of the Company. This excess of value, equal to about one-half of the declared surplus for the year operates favorably upon the reserved unds."

This, be it remembered, is the official statement of men whose integrity has never been questioned—men prone to no exaggeration—men who periodically instruct their agents to do no business rather than make any representation to those desiring to insure their lives which is not in every particular strictly true.

It seems that some have regarded us as actuated by local prejudices in our criticisms of Philadelphia companies, but we can claim, without vainglory, that we rarely, if ever, make any criticisms the truth and justice of which are not fully vindicated by time. We could point out several recent examples of this, but we do not envy those who triumph over the dead, or the dying. We greatly prefer to disprove the imputation alluded to by showing that there are Philadelphia companies which deserve to be ranked among the most faithful and most solid. This is eminently true, for example, of the American Life of that city. Most cheerfully do we admit that there is no company in whose policy we should have more confidence; and in accordance with this feeling we cheerfully place on record its receipts for 1873, as we find them in its last annual statement:

"Premiums received during the year Interest received from Investments and Rents		
	\$1,430,360	95."

We see from the same official document that the surplus premiums returned by the American, in 1873, to the insured, amount, including dividends, to \$306,743.72; we see also that its assets approximate pretty closely to four and a half millions (\$4,450,266.75). In short, as long as the American continues to be managed by Mr. Geo. W. Hill we shall have no apprehension either of its solidity or its integrity.

The second Philadelphia company which may justly claim to be ranked among the faithful few that we compare with the true physicians is the Provident Life and Trust. This is similar in its plan and objects to the "Friends' Provident Institution" of England, one of the very small number of English companies whose escutcheons have never been sullied by a faithless or dishonorable act. We certainly see no reason why the Friends of Pennsylvania should not prove as faithful, energetic and successful as their English brethren—especially the class of Friends

whose good name and fame are associated with the Provident Life and Trust, and there are no better men in the Quaker City than its principal officers. From its Ninth Annual Report we extract the following agreeable evidence of progress during the panic year:

"It will be seen, by the statements herewith, that an unusual growth in the number and amount of policies issued has marked our business for the past year Policies for the sum of \$4,582,726 have been written, making an increase of more than fifty per cent, over the business of any previous year. As the temper of the times has been adverse for several months past, and the year throughout has been far from prosperous with the general community, we are justified in believing that such results are an omen of yet larger figures in the near future."

Mr. Samuel R. Shipley, the worthy President of the Provident Life and Trust, enters into particulars as follows:

"The Life Insurance fund now invested is \$1,504,908.62, which, together with the cash on hand belonging to the Insurance Fund, makes a total of \$1,534,785.34, a sum considerably in excess of the reserve necessary to protect our risks as they fall in. The capital of \$500,009, which is safely invested, apart from the Life Insurance Fund named above, affords an additional guarantee that the pledges of the Company will be faithfully met. We have also a contingent fund of \$121,426.88, belonging to the stockholders' account, to protect the capital from any possible loss; and in view of the demands of the future, we have procured from the Legislature of the State of Pennsylvania authority to increase the capital to \$2,000,000 whenever the interests of the Company shall seem to demand it."

Now, we think that in presenting these facts to our readers, and admitting, without hesitancy, our confidence in their truthfulness, we fully exculpate ourselves from the charge of local prejudice in regard to the good city of Philadelphia. Nay, we really take pleasure in showing that while certain New York, Boston and Hartford Companies are degenerating, falling into consumption, or ceasing to exist altogether, Philadelphia companies are acquiring renewed energy and vigor. In other words, we think the public has an interest in knowing that while the presidents and vice-presidents of certain New York, Boston and Hartford companies seem to be losing whatever modicum of common sense and decency they had in the past, those of at least two Philadelphia companies are becoming more comprehensive in their views, more cosmopolitan in their feelings, and, what is better than all, more and more intent on regarding honesty is the best policy.

But it must not be supposed that we would overlook the merits of companies like the Mutual Benefit of Newark, and the Continental, United States, and North America, of New York; each of which, we are glad to see, continues to exhibit, without ostentation, unmistakable evidences of prosperity and success. We observe that the Newark Company received for premiums and annuities during 1873, nearly five millions and a half (\$5,402,158.53), and nearly two millions (\$1,769,-251.91) for interest. To these pleasant facts and figures it is sufficient to add that the company proves the possession of real assets to the

amount of over twenty-eight and a half millions. As long as this company is managed by so able and faithful an officer as Mr. Grover, its policy-holders need not fear but their interests are in safe hands.

The new vigor infused into the good old United States Life by Mr. DeWitt is still productive of its appropriate fruits. Its receipts in premiums and interest, during 1873, amounted to nearly five millions and a half (\$5,351,729.28). Its assets, at the beginning of the present year, according to the official statement before us, were over four millions (\$4,219,813.68), while its surplus, as regards policy-holders, was over six hundred thousand (\$632,443.46). As there was no more successful agent than Mr. DeWitt while he represented the interests of the Phœnix Mutual, so there is no president more successful, all things considered, than the sagacious, shrewd, officer who guides the destinies of the United States Life. The New York North America's system of registration of policies continues to prove an attractive feature; nor do we know any one who has not found that attraction genuine and substantial. As for the New York Continental, it is almost superfluous to say that it does not lag; that it is as prosperous as ever a few of its official figures will show. Its income in 1873 is indicated as follows:

Its assets, according to the official "statement" before us are over six and a half millions (\$6,539,325.62); its surplus as to policy-holders amounting to \$671,641.62.

We had intended to condole somewhat, in this article, with the policy-holders of several companies which are said to be in a moribund condition; but we find we must beg them to wait for our next number. We confess that we procrastinate thus all the more readily when we bear in mind the startling fact that, not fewer than 57 life companies have ceased to exist since 1865. Being unwilling to add to this great mortality until the patients have had sufficient time to secure proper treatment, we prefer to conclude our remarks on life companies in cheerful and encouraging rather than in lugularious language.

Nor can we do this more conscientiously, or more justly, than by congratulating the policy holders of the good old Knickerbocker on the election of Mr. John A. Nichols to its presidency. This gentleman has been connected with the Company in one position or another for nearly twenty years; and in every position he has distinguished himself by his ability and success. As general agent for the South-eastern Knickerbocker territory—which includes Maryland, Delaware, Virginia, WestVirginia, and the District of Columbia—he very considerably increased the wealth and strength of the company. In consideration of the important services thus rendered the directors elected him second vice-president a little more than a year ago. Six months later he was elected first vice-president; and finally, he was made presiding officer, some two weeks since.

This shows that the present directors of the Knickerbocker are men of discernment and understanding; for they really could not have served the policy holders better, or contributed more to the stability of the company than by making this appointment.

We trust we need hardly say that we would not speak in these terms of any functionary or person without being fully informed as to his character. But it is our privilege to have known Mr. Nichols intimately for more than a dozen years; and we really have known no one who combines, in a higher degree, the most essential qualities and qualifications of a life underwriter. During the presidincy of Mr. Erastus Lyman the company had the advantage of having at its head a gentleman of polished and agreeable manners, as well as an accomplished, energetic underwriter. We were, therefore, sorry for his retirement; but since he has retired we know no one who could have filled his place more efficiently, more gracefully, or more for the benefit of the policy holders, than Mr. Nichols. It is almost superfluous to add to these remarks that our faith in the Knickerbocker is much increased. Its new President will know how to make the best use, for the benefit of the widow and the orphan, of its (more than) seven millions of assets (\$7,064,137.67), and its (upward of) one million (\$1,177,242.73) surplus.

But both our space and time are exhausted. Our glance at the life insurance world has been rapid, yet we think we have shown that, not-withstanding the discredit brought upon the cause by certain classes of underwriters described, more or less plainly, in the preceding pages, there is really no good reason why the public should not be as anxious as ever to avail themselves of the undeniable advantages of life insurance.

Since the great fires of Chicago and Boston have occurred we have abstained, for obvious reasons, from making any criticisms on fire companies. But there has been time enough now for resurrection and recuperation. Accordingly we intend to resume our strictures on malefactors in the Fire Department; and we have good reason to believe that that interesting class have rather increased than diminished in number since the great calamities alluded to. Our readers may remember whether we spoke at random on fire insurance while we continued to discuss that subject. In proof of this, may we refer to our predictions in regard to the International Fire, the Security Fire, and several other similar concerns long before they ceased to exist.

INDEX

TO THE

TWENTY-EIGHTH VOLUME

OF THE

NATIONAL QUARTERLY REVIEW.

Accidents (the) of sublunary immortality, article on, 252-273-bubble, 252-effect of error, 253-illustrious ancients, ib. -eagle and child, 254-effect of an insult, 255incendiary of Ephesus, ib .- tyrants and imbeciles, 255-notoriety, 257-avengers of outrage immortal. 258 -personal insult to Wallace-its effect, 259-genius of Indians, 260-early development of greatness, ib.—hidden genius, 261—exceptional times, 262-inventor of numerical system, 263-pioneers, ib. -a few names that survive, 264-ancients' idea of fame, 265prominent elements of noble character, ib .- anecdote of an American judge, 266of an Italian cardinal. 267-caprice of fame, 268-culminating glory, 269-legend of faithful wife, 270-heroism, 271-chivalry, 272-improvement of faculties, 273-rich reward, 274.

America, discovery of, by the Northmen, article on, 75 et seq.—modern criticisms—sceptical of long-received traditions—strict investigation demanded—William Tell and Capt. John Smith reduced to myths, 76—the credit of Columbus diminished—he was not the original discoverer of America—the Northmen in advance of him by 500 years, 77—the character of the Northmen—their records, obscure and remote, but authentic—first modern account of the documents published, 1705, 79—a relation of their contests, 80 et seq.—Leeland designated as the West.

Appendix, Insurance, 198 et seq.

Baker, Goorge M , his Temperance Drama reviewed and criticised, 176-77.

Beauties, Lost, of English Language, reviewed and criticised, 339 *t seq.

Burrit, Elihu, his Miuute Talks, reviewed, 196-97.

Catalogue of Classical School, criticised, 380-3. Clarke's New Method for Piano, noticed, 391. Coleridge, Sara, her Memoir and Lotters reviewed, 192-96.

Constitutions, political-article on, 158-173progress of government one with human progress, 158 et seq.-development of constitutions, 160 -facts of constitutions precede their philosophy, ib .- constructive process, 161-apportionment of sovereignty, ib .- principles must grow, 162constitutional functions, ib .- love of property inherent and universal, 163-Jewish theocracy, ib .- immortality of soul no part of Moses' system, 164-political system of Greece, 165-their measures only remedial, ib .- Roman system without provision for individual liberty, 166-English institutions favorable to freedom, 167common law derived substantially from civil law, ib .- royal prerogative held in check, 168-American constitution, 169circumstances paving the way, ib .- the confederacy proved powerless, 170-English experience ours my inheritance, ab .abstract principles essayed in governmen t in South Carolina and in France, 171formative influences in development of constitution resident in fact, not in philosophy, 172—future constitutions destined to embody ideals, ib.—173.

Corals, coral reefs, etc., articles on, 207–234
—coral formation, 209—polyps and zoophytes, ib.—Australiun reefs, ib.—living corals, 210—atolls, 211—volcanic formations, ib.—coral region, 212—barrier resis, 213 et seq.—ranges of atolls, 217—subsidence of islands, 218—lagoons, 219—upheaval, 220—uniform subsidence, 221 et seq.—thickness of coral formation, 224—Australian reef, 225—explanation, 226—conclusions, 227—New Caledonia reefs, 228—other formations, 229—scarcity of corals, 230—composition of coral, 231—precious coral, ib.—divers for coral, 232 lagoons and grottoes, ib.—c-ral palaces, 233.

Cyclopedia American, a revised edition, reviewed and criticised, 373-375.

De Vermond, Loudolphe, his Mærs d'Aujourd'hui reviewed, 173-76.

Ecleptic, ib.—effect of obliquity, 313—law of Lambert, ib.—effect of eccentricity of earth's orbit, 314—the snow line, 315 how determined, ib.

Eirek, the Red. 81 et seq .- his voyages-Greenland colonized in 985, ib,-Voyage of Biarni Herinlfson, 83 ct seq .- its details traced, ib .- agree with known facts, ib .-Biarni's subsequent visit to Norway, 87-Leif, son of Eirek, reaches Helluland, ib. -further explorations, ib .- reaches to Markland, and, later, Mantucket (?)description of his voyage and of the countries visited, 89-Vinland, ib .-Thorvald's expedition described, 90-91death of Thorvald, ib .- Thorstein's adventures-account of Thorfinn, 91-arrived in Greenland in 1006, ib,-thence sails for Violand, ib .- Cape Cod and adjacent points reached, 92 et seq. - returned to Greenland in 1010-other mention of Vinland in Danish records, 94-animals of Iceland, 94-sailing of Eirek, bishop of Greenland, to Vinland in 1121, ib .descriptions of other visits as late as 1347, 95-monuments left by Northmen in countries visited by them, 95 et seq .old mill near Newport, R. I., described, 85-runic inscriptions, ib .- Dighton writing rock, ib .- of doubtful authenticity, ib .- Longfellow's " skeleton in armor,"

English Drama, dawn of, article on, 97-120-

significance of Shakespeare's position, 97-German appreciation of him, 98-dramatists, Greek and Roman, 99-extent of Shakespeare's knowledge, ib .- origin of his plots, 100-contemporary estimate, 101-" return of Parnassus," ib .- John Webster's opinion of him, 102-Green's opinion, 103-Henslowe's diary, 104minor dramatists, 104-120-John Lyly, 105, et seq.—passage quoted, 108—Georg P.el, 109-Robert Green, 110-quotation, 111-Thomas Nash, ib.-Thomas Kyd, 112 -Kit Marlowe, 113, et seq .- Taine's estimate, ib .- quotations, 115 et seq .critique of Sir Philip Sidney, 119-indications, ib.

Exposition of Constitution, reviewed, 377-8. Glacial (the) period, article on, 307 et seq.—natural philosophers, 207—terrestilal climate, 306—interior neat, ib—solar heat, dr ft, ib,—fossil trees, 310—astronomical conditions, 311—equatorial regions, 312.

Glaciers, and their phenomena, article on, 35-60--primeval oceans of much higher temperature than present-35 waters of ocean producing changes in configuration of the earth, ib .- proportionate influence of rivers, rains, and snows, ib .- varying height of snow line, 36-appearance of glaciers, ib .- description of, 37. Swiss glaciers, ib .- moraines, 38-extent of glaciers in Norway, South America, Greenland, 39-icebergs, 40-glaciers in United States, 41-45-laws of glacier motion, ib .experiments of M. Agassiz, 46-of Profs. Forbes and Tyudall, 46 et seq.-cause of glacier motion, 47-theories, ib. et seq .sliding theory. 48-theory of Bordier, ib .influence of solar heat, 49-motion molecular. ib .- thickness of glaciers, 50-physical properties of ice, 51-influence of glaciers, 52-glaciers in South America and Great Britain, 53 .- European glaciers, ib. and 54-Lyell on transporting power of glaciers, 55-drift, 56-drift phenomena of South America, 57-cause of glaciers, 57 et seq .- extinct glaciers of New England, 59glaciers in Sierras of California and Virginia, 60,

Gorton, Dr. D. A., his Mental Hygiene, rov.ewed, 189-191.

Hamilton, Alexander, article on, 120-158-eloquent appeal of Governeur Morris in funeral oration, 120-H. died the last active Federal leader, ib.

—Federal party broken up after war of 1814, ib.—Hamilton's renown independent

dent of party, the leading events of his early life, 122-is elected to Congress in 1782, 123-1786 chosen member of Assembly, 125-Noah Webster proposes a new system of government, 126-Charles Pinckney's plan of federal constitution, 127-Hamilton's plan presented, 127--130 -Distinctive features of the "Virginia plan," 130-Madison's ideas, ib.-suggestions of Pinckney, Wilson and Dr. Franklin, 131-132-his conviction of necessity of strong government, 133-a committee of revision and arrangement appointed, ib .- the rhetorical excellence due to Gov. Morris, 137-in view of the critical juncture Dr. Franklin suggests prayer, 138-stable government a slow outgrowth of national characteristics, 140-" nations grow, are not made," ib.-development of English constitution, ib .- Am. government likely to change, 141-influence of Hamilton important, ib. -the work of the convention assailed, ib. -history of the Federalist, 1b -impossible to distinguish his contribution from Madison's, ib .- concurrent influence of prominent men. 148-federal action of New York mainly due to Hamilton, 144character, appointments and cabinet, 145wisdom of his selection, causes of national weakness at home and abroad, 146-Washington's term of office a critical term, ib .- national regeneration needed, ib .state rights versus centralization, 147general gloom and distrust, ib .- agriculture discouraged, 148-financial estimates of debt, and expenses, ib .- H. favors the assumption of the state debts, ib .- the debt funded, 149-H.'s financial theo ries, ib.-their wisdom, 150-Washing. ton's estimate of H's. sagacity, ib .- H. opposed to Madison, ib .- retires from treasury 1796, ib .- complications with France. ib,-creation of an army 1798, ib.-Hamilton in command, 151-resumes his profession in N. Y., 152-is censured, and viodicated, ib -duel with Burr, ib. -contrasted and compared with Pitt, Clay, Webster and Calhoun, 153-his style of composition, it .- his career soldier, jurist, publicist and statesman, ib .- accused of being a monarchist, ib .- Jefferson's attacks, ib .-Hamilton's dmiration of the British constitution not exceptional or blameworthy, 155-his willingness to give republicanism a fair trial, 156-our debt to H. ib .-

his ideas of a strong government, ib. the question discussed, 157—his opinions on constitutional question the basis of of modern judicial decisions, ib.—his assured, 158.

Icelandic Poetry, article on, 61--75-contrasts and similarities of intellectual life, 61example, 62-six branches of Germanic language, ib .- recent lectures in London, ib .- did the Romans know Iceland? 63-Iceland discovered by Norwegians, ib .its history and nature, 64-growth of Icelandic poetry, ib .- its peculiar revelstions, 65-its loss by conversion to Christianity, ib .- peaceful advent of Christianity, 66-voyages, ib .- development of Icelandic literature, 67-the younger and elder Edda, ib, -quotations, 68-comparison of Northern gods with Greek deities, 69quotations, 70 et seq.-foreign use of Saga fables, 71-Tennyson, 72-the Edda's saga of Sigurd, 73-Havamal, ib .- the Edda epical, 74-conclusion of Tegnir's Saga, 75.

Institutes, Academies, etc., article on, 3307et seq .- American liberality to education, 330 -our free schools, ib .- pretended educators, ib .- laws against such in European countries. ib .- criticism, 331-experiences of critics, 332 et seq.-different classes of institutions, 333-annual christening, 334 Nyack salt water, ib .- pabulum at Rockland Lake, 335-Riverview Academy, 337 et seq .- success and its evidences, ib .- military schools and their reverend principals. 339-Jackson Institute, 340 et seq.-Mount Pleasant Academy, 342 et seq .- rec tations at, 344-Peekskill Military Academy, 345 et seq-comedy of errors, ib.-curiosities, 347 -Poughkeepsie Female Acadeny, 347 et seq recitations at, ib .- - Brooks Seminary, 349-Tarrytown and Nyack, 350-Irving Institute, 351-curiosities ib .- Cottage Hill, ib. -Fort Edward Institute, 352, et seq.-recitations and general character, ib .- Claverack College, 358 et seq.

Lessons, Easy, in Natural Science, reviewed and criticised, 382-5.

Memoirs of Many Men, etc., reviewed, 385-7.
Mill and Agassiz, article on, 234-252—comparisons and characteristics, ib.

Peterson, Henry, his Fair Mount criticised, 181-82.

Phillips, Waldorf H., his World to Blame, reviewed, 197-98.

Phineas Redux, reviewed and criticised, 388-9.
Public Health, Responsibility of Govern-

ment for, article on 1-35-science and progress, 1-dirt and disease, 2-health and longevity, ib .- simple diseases complicated by a noxious atmosphere, 4-recent statistics of zymotic diseases, 6-testimony of Dr.Comb, ib .- Pagan method of dealing with weakly infants, ib .- cost of preventible diseases, 7-shall the State undertake the public health? 8-limit of individual rights, 9-health of duty, 10contiguity of graveyards, 12-old pumps and cisterns, 14-table of deaths from typhoid fever in Boston, 15-diminished deaths due to supply of pure water, ib. - importance of pure air, 16 et seq. value of sanitary labors, but more discretionary power needed, 19-influence of dwellings upon their inhabitants, 20legislation necessary to prevent overcrowded tenements, 21-large percentage of mortality ib .- statistical society and reports of health commissions, 22-table, ib .- fearful mortality among operative children, ib .- sanitary condition of Liverpool, 24-death-rate in 1842 one in fifteen, 25-what sewage does for cities, drainage does for the country, 27-malarious frog ponds, ib—malarial fever the universal scourge, 28—Richard Talbot, the quack, 29—the question of health discussed from a pecuniary standpoint, 30—table of mortality first calculated in the interest of life assurance, ib.—good results of sanitary efforts, ib—duration of life 20 per cent. greater in England and Wales than twenty years ago, 31—need of increased vigilance, 32—the task by no means hopeless, ib.—"Providence" not responsible for disease, 34.

Sargent, Epes. his School Manual of Etymology, reviewed, 182-84.

Self-Culture, on, reviewed, 378-80.

Strauss and his pantheistic system, article on, 274-307—system of Hegel, 271—priod of transition, 275—first work of Strauss, 276—fundamental proposition, 277—matter and mind, 278—fatalism, 279—biographical sketch, 280 et seq.—coherent, universe, 283—tradition and hypothesis, 284, et seq.—system of criticism, 286.

Structure of Animal Life, reviewed, 375-7. Washington, salient characteristics of, article on, 360-372.

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From the Pittsburgh Daily Dispatch,

"Dr. Edward I. Sears, editor of the National Quarterly Review, having written a scathing article on the University of Pennsylvania at Philadelphia, complaining that the students were permitted to obtain degrees without being at all qualified, Provost Stille, of the debated institution, replied in still more biting style, and between him and the entire press of Philadelphia, Sears was pretty thoroughly used up—as vas supposed. But he comes to the breach again in the current number of the Quarterly, now on our desk, and shows that his remarks on the graduates might apply also to the Provost. He quotes a private letter of ten lines, written by Mr. Stille, in which three sentences are run into one, two simple words grossly misspelled, and four words erroneously capitalized. This is a terrible retribution on the Provost. It is clearly a fresh illustration of the lact that many men assuming high places as educators are poorly qualified to discharge the functions properly belonging to such places.

"Here is a copy of the letter:

PHILADELPHIA, May 1, 1867.

EDWARD I. SEARS, Esq., I.I.D.:

DEAR SIR—I have your letter of the 28th ult., addressed to "the President of Pennsylvania Uneversity" (there is no such person), and I beg to say in reply, that while our arrangements do not permit the presence of Strangers in our recitation rooms during recitation hours we shall be happy to see you or any one else enterested in the Subject at the annual public examination of our classes which takes place from the 15th to the 20th of June next—

Very respectfully C. J. Stillé Provost

&c

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From a well-known Scholar and Thinker.

"PHILADELPHIA, April 12, 1873.

"DEAR SIR:

"In exposing the true character of the so-called University of Pennsylvania you have earned the thanks of all friends of liberal education. The whole institution reeks with fraud, especially the 'Department of Arts,' which is exceedingly well-named, if by 'Arts' we understand 'ways that are dark and tricks that are vain.' The worst feature of the case is, that everybody (outside of the University Ring) admits the truth of your strictures, and yet nobody very much cares! Criticism by anybody living here is met by the most venomous opposition; not by denial of the facts, which are patent, but by furious assaults, malignant slanders, and imputation of unworthy motives. No city paper will print even the most moderate article suggesting improvements.

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Interest, Rents, &c			2,684.319	80
DISBURSEMENTS:			\$9,748,457	47
Paid Death Claims	\$778,647	53		
and Lapsed Policies	1,631,624	40		
Total Paid Policy Holders				
Dividend on Stock	7,000	60		
Commissions, Taxes, Legal and Medical Fees	228,654	61		
Expenses	68,517	89		
Salaries	57,371	56	2,771,315	99
Net Assets, January, 1874			\$6,976,641	48
Real Estate—cost	\$312,097	11		
Stocks and Bonds—cost	468,224	65		
Loans and Collaterals	174,355	00		
Loans on Bonds and Mortgages	2,385,657	12		
Cash on Hand	2,743	15		
" in Banks and Trust Companies at interest	63,625	08		
Premium Loans	3,444,105	58		
Furniture, and all other Assets in possession	25,833	79		
Add:			\$6,976,641	48
Accrued Interest and Rents	\$219,117	40		
miums	646,814	37		
Commuted Commissions	202,825	96		
Due from Agents	3,915	56		
Profit on Investments	37,696	25		
Gross Assets, January 1, 1874	********		\$8,087,211	02
Reserve on all outstanding Policies, Dec. 31, 1873		29		
Losses reported not yet due	131,550	00		
Capital Stock	100,000	00	6,909,968	29
Surplus		. 8	1,177,242	73
RATIO OF EXPENSES (including taxes) TO TO				

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CONTINENTAL LIFE INSURANCE COMPY

OF

Nos. 22, 24 and

PRESIDENT,

L. W. FROST.

SECRETARY, J. P. ROGERS.

KEDICAL EXAMINER,

E. HERRICK, M. D.

ANNUAL STATEMENT,



NEW YORK.

26 Nassau Street.

VICE-PRESIDENT, M. B. WYNKOOP.

ACTUARY,

S. C. CHANDLER, JR.

COUNSEL,

WHITNEY & BETTS.

JANUARY 1st, 1874.

Income, 1873—Premium Receipts Interest and Rents received and accrued	, 383,865 93	- \$2.932.601 25
Disbursements	\$6,539,325 62	645,031 93
Surplus as to Policy Holders. Number of Policies issued in 1873		6671,641 62 7,220
Amount insured in 1873		27,931
Amount Insured		791,483 00

EXTRACTS FROM LEADING JOURNALS.

FOREIGN AND DOMESTIC.

"The Quarterly gives evidence of continued vitality and enterprise, and occupies a position almost exclusively its own."—Boston Transcript.

"The National Quarterly Review has achieved a reputation second to no similar periodical in the country, and to the deep learning, rare ability and indefatigable labor of Dr. Seans, its originator, editor and largest contributor, are we indebted for a publication in all respects honorable to American literature. Subjects discussed in its pages are treated with comprehensive knowledge and impartial criticism, and whether the judgment of the editor accords with that of the reader or not, none will dispute its candor and fair presentation."—
Roston Post.

"'Our Millionaires and their Influence' is a powerful and well-merited castigation of the mere money-makers, the railroad rogues, the gold-market speculators, who override society in the New World as well as in the Old."—Phila. Press.

"It is creditable to our transatlantic friends to sustain a journal which, like the National Quarterly Review, possesses the courage to unmask false pretensions, and both the ability and disposition to improve the public taste."—Edinburgh Scotsman.

"Il (the editor) a mérité l'estime de nos savans par d'important traveaux comme critique sur la haute education, aussi bien que la litérature."—Independance Belge, Brussels.

"* * Vassar College and its Degrees is a merciless unmasking of an educational sham, deserving the gratitude of all friends of true education, * * "—Christian Standard, Cincinnati, O.

"" * No one can take up the two American quarterlies without feeling that, while the one is the organ of a clique, and bound down and restrained by the narrowest Puritan sentiments, the other is broad, generous and Catholic in tone, and world-wide in its sympathy. The North American and its little sister, the Allantic Monthly, think of the world from what Lord Bacon would have called the Cave, and treat the world as if Boston were really the hub of the universe. The National Quarterly takes a bolder standpoint, and from its greater elevation makes juster observations and arrives at more correct conclusions. * ""—New York Herald.

"It certainly exhibits high culture and marked ability."-London Saturday Review.

PHENIX MUTUAL Life Insurance Company,

HARTFORD, CONN.

January 1st, 1874.

Policies Issued, 1873, 9,522. | Income, 1873, \$3,521,240.57.

The Fourth Company in the U.S. as to amount of New Business	in 1873.
ASSETS, securely invested	9,074,861.34
SURPLUS, free of all liabilities, over	875,000.00
DIVIDENDS, paid to Policy-holders during the year	1,070,455.48
INCOME, for the year	3,521,240.57
LOSSES, paid during the year	

COMPARISON OF THE BUSINESS OF 1872 AND 1873.

Income.	Dividends paid Policy-holders.	Losses by Death.	Net Assets.
1872\$3,413,752.45	\$943,441.71	\$831,116.32	\$8,209,325.07
1873 3,521,240.57	1,070,455.48	932,534.75	9,074,861.34

An increase which affords most convincing proof of the growing and well-merited favor with which the Company is regarded by insurers.

The following table exhibits the progress of the Company during the last ten years :

. 3	COLD.					
		Policies issued.	Income.	Dividends paid Policy-holders.	Losses by Death.	Net Assets.
1	864 and '65.	6,599	\$789,733.00	\$2,383.00	\$117,200.00	\$903,285.00
1	866 and '67.	9,919	2,027,651.00	50,222.00	199,050.00	2,218,314.00
1	868 and '69	16,852	4,363,812.00	461,716.00	502,544.00	5,081,975.00
1	870 and '71	19,105	5,963,392.00	1,162,412.00	1,153,056.00	7,510,614.00
1	872 and '73	20,049	6,934,993,02	2.013.897.19	1,763,651.07	9.074,861.34

An examination of the above figures shows that the Company is a progressive one, that it guarantees ample security to its Policy-holders, and that it affords Insurance at the lowest rates. It has also, within the last ten years, paid to its Policy-holders, in Dividends, more than

THREE AND A HALF MILLION DOLLARS.

And in losses by death more than

THREE MILLION SEVEN HUNDRED THOUSAND DOLLARS.

And at the same time it has greatly increased its Assets, as well as maintained a large surplus over all Liabilities.

Since the commencement of its business the Company has issued over

EIGHTY-TWO THOUSAND POLICIES.

And has paid to the families of its deceased members nearly

FOUR AND A HALF MILLION DOLLARS.

J. F. BURNS, Sec'y.

E. FESSENDEN, Pres't.

7,342,835 38

TWENTY-THIRD ANNUAL REPORT

OF THE

MANHATTAN

LIFE INSURANCE COMPANY.

OF NEW YORK,

NOS. 156 & 158 BROADWAY.

January 1, 1874.

INCOME FOR THE YEAR 1873.

THOUSEN TOR THE TENE TOTO:	
For Premiums, Extra Premiums, &c	\$1,596,381 27
For Interest.	. 531,752 78
For Interest, &c., accrued	
	\$2,393,172 00
DISBURSEMENTS.	, , , , , , , , , , , , , , , , , , , ,
Paid for Claims by Death on Policies and Payment	
of Annuities	
Paid for Dividends, Return Premiums, Purchased	
Policies, and Interest on Dividend 494,072 19	

Total amount returned to Policy-Holders \$1,173,259 35 Paid for Expenses, Salaries, Taxes, Rev. Stamps,

Medical Examiners'	Fees, and Commissions	. 313,677 93		
			\$1,486,937	28:
	ASSETS.		,	
Cash in Bank Trust Co.	and on hand	\$256 580 22		

Chou in Dairy, 11480 Co., and On Hand	\$000,000	00
Bonds and Mortages, and interest accrued on same	4,355,426	08
Loans on Policies in force	2,299,623	00
United States and New York State Stocks		
Quarterly and Semi-Annual Premiums deferred.		
and Premiums and Interest in course of col-		
lection and transmission	579,733	56
707 T CH 1 1 1 7 1 1 1 1 1	,	

lection and transmission	019,103	90
Temporary Loans on Stocks and Bonds (no value of the securities, \$844,257)	629,950	00
Interest due to date, and all other Property	70,598	

Gross	Assets					\$9,009,462	3
Reserve	required	for all	Policies in	force, Carlie	sle		
4 pc	er cent				\$6.880.151	84	

4 per	cent		 	\$6,880,151	84	
Claims by	death not yet due		 	264,970	00	
Dividends	unpaid and all other	liability	 	197,763	54	

Undivided	Surplus	,665,	626	95
The Manhati	tan invites a comparison with other Companies as to the following	ng pari	icular	es:

The large Proportion of its Assets to Liabilities.
 The small Ratio of Expenses to Income.
 Care in the Selection of Risks.
 Prudence and Skill of Administration.

5. Justice and Liberality in the Payment of Losses and Dividends.
6. The even and uninterrupted Success of its Operations for a quarter of a Century.

PRESIDENT, VICE-PRESIDENT. SECRETARY, HENRY STOKES. C. Y. WEMPLE. J. L. HALSEY. S. N. STEBBINS.

NEW ENGLAND

MUTUAL LIFE INSURANCE CO.

OF BOSTON.

Branch Office, 110 Broadway, New York.

DIRECTORS IN BOSTON:

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HOMER BARTLETT, DWIGHT FOSTER. JAMES STURGIS, W. W. TUCKER, BENJ. F. STEVENS.

BENJAMIN F. STEVENS. President.

JOSEPH M. GIBBONS, Secretary.

Accumulation, \$12,000,000 Distribution of Surplus in 30 yrs., 1,600,000

Losses paid in 30 years, \$7,500,000.

Policies of all descriptions are issued by this Company.

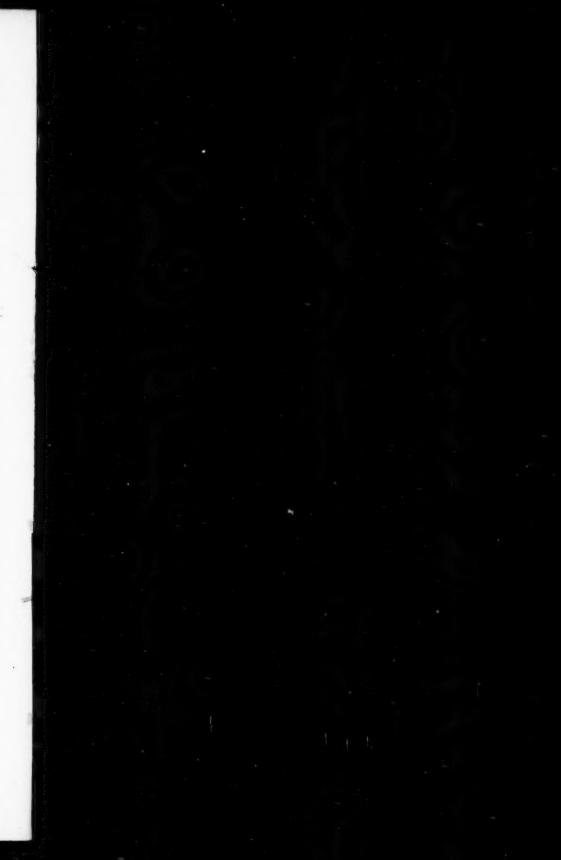
Distributions of Surplus are to be made annually, and payable as the Premiums fall due.

Printed documents pertaining to the subject, together with the report of the Company for the past year, and Tables of Premiums, supplied gratis, or forwarded free of expense, by addressing

SAMUEL S. STEVENS,

AGENT AND ATTORNEY FOR THE COMPANY,

Cor. Pine Street, No. 110 BROADWAY, NEW YORK.





Extracts from Reviews and Notices of two last Numbers.

"The National Quarterly Review, of which Dr. Edward I. Sears is editor and chief contributor, is by far the best of all our American quarterlies, and is at least equal to any of the English. Brilliant, learned and strictly impartial, it has from its very commencement waged ceaseless war against every species of bigotry and intolerance, fraud, corruption and imposture."—Philadelphia Inquirer.

"The September number of this excellent Review, edited by the scholarly Dr. Edward I. Sears, contains a series of interesting articles showing profound research and criticism of the highest order."—New York Hebrew Leader.

"The National Quarterly Review, by Edward I. Sears, editor and publisher, New York, has attained a standing and eminence among the quarterlies, owing to its vigorous discussion of the live questions of the day. A distinguished ability has presided over its pages."—Providence Press.

"The article on Archbishop Spalding contains a just and eloquent acknowledgment of the obligations of science, art and literature to the Catholic Church. His eulogium of Archbishop Spalding is evidently the sincere testimoniai of a friend."—Philadelphia Catholic Standard.

"The energy, enterprise and thorough scholarly tone of this Review have raised it to a high place in American critical Interature, which it holds with a constant ability. The indefatigable labor and the large learning and discriminating judgm: t of its editor are evident in every number. Its articles are prepared with a care and a thoughtfulness that are rarely found, and its impartial criticism and comprehensive range of discussion render it a publication of remarkable value."—

Boston Post.

"The National Quarterly Review (American) maintains its excellent reputation, and may be justly regarded as our ablest rival of similar English publications."—

Troy Times.

"The National Quarterly for June has an array of attractive topics, and, these being treated according to their value, the number abounds in good matter."—

Boston Transcript.

"A very strong case against Mr. Andrew H. Green, as Comptroller, is made out and his manifest leaning to the Ring is shown, not alone in strong Anglo-Saxon prose, but also in satirical verse, American and German. It is an outspoken periodical, and, independent of its literary and critical merits, ought to be honored for having been the first to sound that Joshua-like trumpet blast against Tweed and his associates of a corrupt Ring in New York, which caused the walls of Tammany, that modern Jericho, to fall and crumble in the dust. Of course, a leader of the van, as the first to raise the veil from municipal fraud and plunder, he was assailed with limitless abuse, and visited with a large amount of personal persecution; but he now sees the Ring shivered at his feet, and its component members either fugitives from justice or brought under its lash."—Philadelphia Press.

AND Two Dollars (\$2.00) will be paid by the Editor for each copy of the first or second number of the National Quarterly Review.

CONTENTS OF No. LVI.

MARCH, 1874.

- I. CORALS, CORAL REEFS AND ISLANDS.
- II. MILL AND AGASSIZ.
- III. THE ACCIDENTS OF SUBLUNARY IMMORTALITY.
- IV. HERR STRAUSS AND HIS PANTHEISTIC SYSTEM.
- V. THE GLACIAL PERIOD: ITS CAUSE AND INFLUENCE.
- VI. INSTITUTES, ACADEMIES AND SEMINARIES ON THE HUDSON.
- VII. THE SALIENT CHARACTERISTICS OF WASHINGTON.
- VIII. NOTICES AND CRITICISMS.
- IX. APPENDIX-INSURANCE: THE GOOD, BAD AND INDIFFERENT.
 - X. INDEX TO VOL. XXVIII.

FOREIGN POSTAGE.

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the city subscription is 40.20

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